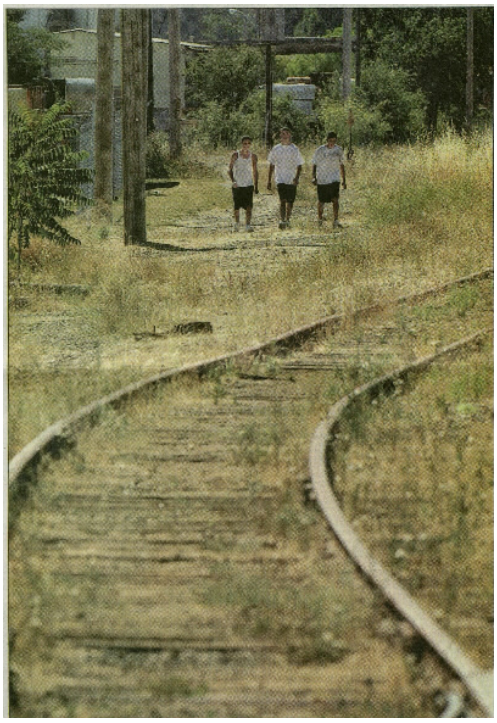
Foss Creek Pathway Plan



City of Healdsburg

Foss Creek Pathway Plan

Prepared for

City of Healdsburg

Metropolitan Transportation Commission

Prepared by

City of Healdsburg Planning Department

Landmark Planning and Permit Service

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In association with

North Coast Railroad Authority

Sonoma Marin Area Rail Transit

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City of Healdsburg Redevelopment Agency
North Coast Railroad Authority
Sonoma Marin Area Rail Transportation Authority

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1 Introduction

1.1 Summary

This Plan establishes the alignment and design standards the City of Healdsburg will use to construct the Foss Creek Pathway alongside the Northwestern Pacific Railroad and Foss Creek between Front Street and the city's north boundary. The pathway will complete a 4.1-mile long bicycle and pedestrian facility through the city by connecting to the existing bike lane along South Healdsburg Avenue, which continues south along Old Redwood Highway to the Town of Windsor. At the north end of the city, the pathway will tie into a bike lane along Healdsburg Avenue that will eventually run to the north city limit line and provide access to Alexander Valley. Completion of the pathway will provide cyclists with safe and convenient bicycle access from the City to northern Sonoma County's premiere wine production areas.

The pathway will also tie major destinations together within the city by connecting residential areas with employment centers, recreational areas (such as Veteran's Memorial Beach Park and the Carson Warner Memorial Skate Park) and the downtown. It will provide children a safe route to school, and create a pedestrian/bicycle link to the planned Healdsburg intermodal transit facility and railroad station. Major segments of the pathway will lie adjacent to Foss Creek and provide the public with opportunities to view its riparian vegetation.

The Healdsburg City Council made the pathway a priority because of its benefit to community residents and businesses and to Sonoma County visitors. The regional value of this pathway is recognized by its inclusion in the Sonoma County Bicycle Plan and the Metropolitan Transportation Commission Regional Bicycle Plan. It is also included in the Sonoma Marin Area Rail Transportation (SMART) Plan as a segment of its planned railroad right-of-way bikeway and as a needed pedestrian and bicycle link to the historic Healdsburg Train Station, which is planned for restoration.

Numerous agencies have recognized the merits of this project through the awarding of funding. The Metropolitan Transportation Commission (MTC) awarded a $50,000 Transportation for Livable Communities (TLC) grant to the City to prepare this plan and to complete environmental review. In addition, MTC allocated approximately $100,000 in Transportation Development Act funds that allowed the City to construct approximately 1,200 feet of the pathway in the city's downtown in 2005. The Northern Sonoma County Air Pollution Control District has granted another $100,000 to help construct the pathway from Front Street to the Healdsburg Railroad Station. Finally, in 2004, United States Representative Mike Thompson worked to obtain a $1.25 million federal grant to construct the remainder of the project.

1.2 Background

In 1998, the City renewed its landscape easement with the North Coast Rail Authority (NCRA) and secured the right to develop a public pathway within the railroad right-of-way in the downtown area. In 2001, the City completed a pathway feasibility study, which identified a north-south corridor in which a pathway could be built through the city. This study was then used to secure a grant from MTC's TLC Planning Grant program to prepare this Plan.

1.3 Plan Process

The Plan is based on a preliminary feasibility study and a series of technical working papers prepared by Alta Planning + Design during 2002-04, which established that the pathway could be built along Foss Creek and the Northwestern Pacific Railroad. During this time, Alta Planning and Design conducted a community survey and held a series of meetings with community

residents, agency staff and public officials to verify that the pathway alignment and design reflected the goals of the community, that it would be compatible with railroad operations and that it would comply with local and state regulations.

1.4 Plan Organization

The Foss Creek Pathway Plan provides the framework for building the pathway in segments over time. The Plan includes two parts - a report and an illustrative plan - that work together to describe the pathway setting, goals and policies, alignment and access, construction standards and design guidelines, site opportunities and constraints, and implementation. The Plan is based on information and analysis prepared by Alta Planning + Design contained in a technical supplement to this Plan.

This report describes the physical and institutional context in which the pathway is located (Sections 1 and 2). It goes on to outline the goals and policies that were formulated by meetings and workshops with the community, the railroad and public agencies (Section 3). These policies, in turn, guided the pathway alignment, which is described by segments or reaches that can be built independent of each other as funding becomes available in the future (Section 4). This section of the Plan also identifies significant opportunities and constraints for each pathway segment. The next two sections (Sections 5 and 6) focus on pathway construction standards and design guidelines that will be utilized to prepare construction plans when pathway reaches are built in the future. The implementation section (Section 7) provides cost estimates for each reach and identifies development approvals that will be required and describes potential funding sources that the City may pursue to finance the pathway construction.

The Pathway Alignment Details is a series of aerial photographs that illustrate the potential alignment of the pathway and the location of pathway improvements. These photographs are not construction plans; rather they are meant to illustrate the pathway in relation to the railroad right-of-way, Foss Creek and adjoining land uses. They also highlight existing conditions or structures that constrain the pathway alignment.

2 Pathway Setting

The Foss Creek Pathway will run north-south through the City of Healdsburg, closely following Foss Creek and the Northwest Pacific Railroad (NWP) for a distance of approximately 4.1 miles. Its route traverses through the City's industrial, commercial and residential areas and connects neighborhoods to the downtown, parks, schools and public facilities that lie along the NWP corridor. The grade along the route is generally level with the exception of the raised railroad track ballasts north of Chiquita Road and steep creek banks in some areas.

The creek and the railroad are the most significant physical features along the pathway corridor that affect the precise alignment of the pathway. The pathway must accommodate the railroad operations and maintenance as well as allow maintenance access to The Geysers wastewater pipeline that is located within a portion of the railroad corridor.

The pathway will cross Healdsburg Avenue and Dry Creek Road, requiring new and/or improved pedestrian crossings. The pathway will use existing pedestrian crossings at North Street and Grove Street, while its location on West Grant Street will require a new mid-block pedestrian crossing.

2.1 Foss Creek

Aside from the Russian River, Foss Creek is the largest waterway within the City. It originates near Passalacqua Road at the north end of the city and flows south to its confluence with Dry Creek, near the US 101 Central Healdsburg on/off ramp. Norton Slough, a small tributary to Foss Creek located south of West Grant Street, enters the creek south of Grant Street. Foss Creek and two drainage basins, including one along Grove Street and the pathway alignment, serve a vital function by conveying runoff out of the city and alleviating flooding during heavy rainstorms.

Winter flow in Foss Creek

In most places where Foss Creek runs within the railroad right-of-way, it is located between 15 and 35 feet from the railroad tracks. In locations where the track is closest to the creek and where bank stabilization structures have not been constructed or not maintained, the creek has severely eroded the track ballast.

The creek's numerous street and railroad crossings reflect the urban context through which it passes. At Matheson Street, the creek enters a box culvert and briefly emerges approximately 230 feet to the south before entering another culvert that allows the creek to pass under the Mill/Vine/Healdsburg Avenue intersection.

Foss Creek is eroding the NWP Railroad ballast in several locations

2.2 Northwestern Pacific Railroad

The ownership of the NWP within the city is split between the NCRA and SMART. The NCRA owns the railroad north of the Healdsburg Avenue crossing (milepost 68.22) while SMART owns the railroad to the south. SMART also owns the Healdsburg Train Depot and the adjoining maintenance yard, which are located south of Hudson Street, between Front Street and Healdsburg Avenue.

The railroad right-of-way within the city is typically 50 feet wide. However, the right-of-way is narrower for a short segment just north of the Healdsburg Avenue railroad crossing and for a longer distance on both sides of the Dry Creek Road railroad crossing. In addition, there are sections of the track between West Grant Street and Dry Creek Road where the creek and buildings have effectively narrowed the right-of-way available to the pathway.

At present, there is no train service on the NWP. The NCRA is planning to resume freight service through Mendocino and Sonoma counties. However, before freight service can resume, the Federal Railroad Administration is requiring that the NCRA repair its track to fulfill safety requirements.

Historic Healdsburg Train Depot

SMART has prepared a plan to start a new passenger rail service between San Rafael and Cloverdale, a distance of 70 miles. SMART must first obtain voter approval in November 2006 for a sales tax increase to fund the project and obtain environmental clearance before it can commence operation.

Fourteen station sites are currently assumed along the corridor, including one in Healdsburg. As a result of strong public interest, SMART has included in its mission the development of a bicycle/pedestrian path along the railroad right-of-way in conjunction with the development of track improvements required for commencement of SMART commuter rail operations. The Foss Creek Pathway is the first pathway project to move into construction and design along the 70-mile corridor.

This Plan adopts many of the pathway standards that SMART developed for its plan. These standards where formulated by SMART with substantial input by the NCRA, railroad operators and other public agencies. The SMART bike path alignment through the city is the same as the Foss Creek Pathway alignment shown in this plan.

The City is working with Sonoma County Transit and SMART to develop an inter-modal transit facility at the historic Healdsburg Train Depot. This project includes the construction of a bicycle and pedestrian pathway between the facility and Healdsburg Avenue that will be part of the Foss Creek Pathway.

2.3 Geysers Wastewater Pipeline

A portion of the 50-mile long pipeline between Santa Rosa and The Geysers geothermal fields runs on the east side of the NCRA railroad right-of-way, between Dry Creek Road and Grove Street. Because the pathway will run over the top of the buried pipeline, the City will have to enter into an agreement with the City of Santa Rosa to ensure the pathway will not obstruct maintenance and access to the pipeline.

3 Planning Goals and Policies

The City of Healdsburg recognizes that a well-designed and accessible pathway through the city will encourage walking and bicycling which, in turn, will promote healthy physical activity, help reduce traffic congestion and improve air quality within the city. These outcomes are consistent with the recreation and transportation goals of the City's General Plan and would implement a key part of the city's Bicycle Plan. The pathway is also consistent with the Countywide Bicycle Plan, as it would tie into the bicycle routes in Alexander and Dry Creek Valleys to the north and west and with bicycle lanes to Windsor and Santa Rosa to the south.

3.1 Community Outreach

In 2003, the City reached out to the community to find out how the pathway would be used and to identify the improvements or amenities it needed to make it a functional and pleasant facility. To do this, the City sent out a bilingual survey (Spanish and English) to 6,000 households and held a community meeting to present a preliminary pathway plan. The residents showed their strong interest in the pathway by sending back 375 completed surveys and by their attendance at the community meeting. The survey and the community meeting helped solidify the goals of the plan and identified key design guidelines that are included in this plan and that will be used to build the pathway.

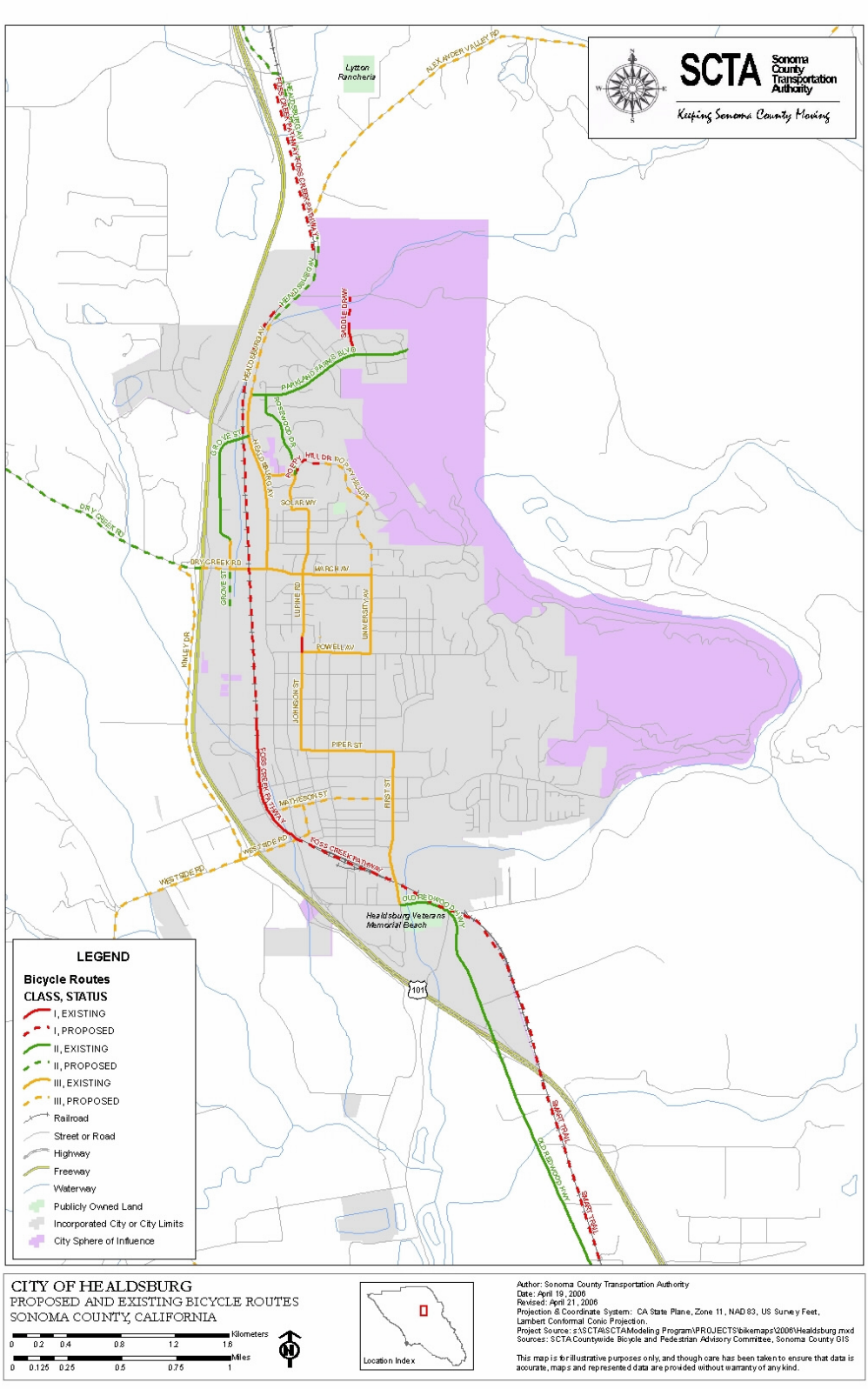
In summary, the survey indicated that over 80% of the respondents support the pathway. Survey responses and public meeting comments indicate that the majority of the residents would use the pathway for recreational purposes two to four times a week. A small but significant number (17%) said that they would use the pathway to commute to work. They said that pathway improvements and amenities such as trashcans, bathrooms and landscaping would make its use more pleasant and they asked for lighting to extend its use into the evening. It is notable that more than half of the respondents said they do not allow their children to ride bikes or walk to destinations within the city because of their concern about high traffic speeds and volumes and the lack of safe sidewalks. Finally, many residents asked that the pathway be built as soon has possible.

Detailed survey results are presented in Appendix A.

3.2 Potential Pathway Users

Understanding that different types of users demand widely different types of facilities - and what is desirable by one user group may be completely inappropriate for another - will help to ensure effective pathway planning and design to meet the needs of the local community. This section describes the typical user groups in an attempt to illustrate how different types of pathway facilities may best suit their specific needs.

The city's favorable climate and relatively flat terrain along the pathway is likely to encourage people living near the pathway to ride or walk more often. A large number of residents do not ride (or would ride more often) simply because they are uncomfortable using the existing street system and/ or they do not have appropriate bicycle facilities at their destination. The survey indicates that the pathway location near the City residential areas may increase the number of non-motorized commute trips within Healdsburg by providing a direct connection to nearby schools, employment and commercial centers, and transit facilities.



Countywide Bicycle Plan – Healdsburg Detail

Healdsburg Foss Creek Path Survey

Help Us Make Our City a Better Place to Bike and Walk

The City of Healdsburg is working with the Metropolitan Transportation Commission (MTC) under a federal grant to design and build a bicycle and pedestrian path through town. This path will extend approximately 4 miles between the southern and northern city limits along Foss Creek and will utilize portions of the Northwestern Pacific Railroad (future Sonoma Marin Area Rail Transit, SMART) right-of-way. When completed, the path will provide a new opportunity for residents and visitors to bicycle or walk to destinations all over town including many major destinations located adjacent to the corridor such as schools, transit, parks, downtown, City Hall, the Healdsburg Depot Transit Center, and the Grant Street Park-and-Ride Lot, among others. Your completed survey will help us plan a safer, more user-friendly path. Please be as specific as possible when answering the questions. Thank you for your participation!

For what purpose would you use the path?

☐ Recreation
☐ Commute (if checked, please complete below)

How would you commute if the path did not exist?

☐ Car ☐ Bus ☐ Walk ☐ Bike
☐ Other (please specify)

_____

On average, how often do you anticipate you will you use the completed path?

☐ Daily ☐ 2 to 4 times a week
☐ Once a week ☐ Once a month
☐ Other (please specify)

_____

Approximately how far do you live from the path?

☐ ¼ mile or less ☐ ¼ to 1 mile
☐ 1 to 2 miles
☐ Over 2 miles
(please specify in miles) _____

If your children do not walk/bicycle to or from school, parks, or other destinations, what concerns do you have about them doing so?

☐ Too much traffic in the neighborhood
☐ Too far to bike
☐ No sidewalks on route to school
☐ Cars drive too fast through the neighborhood
☐ They have too much to carry
☐ Their bike might get stolen
☐ Crime- strangers, gangs, bullying
☐ Other (please specify):
_____

In good weather months, about how many days a month do you walk or ride your bike?

☐ Never
☐ Occasionally (one or two)
☐ Frequently (5-10)
☐ Most (more than 15)
☐ Every day

How important are path amenities? (please rate each item 1 to 8; 8 being most important and 1 being least important)

__ Restrooms __ Lighting
__ Trash cans __ Parking
__ Landscaping __ Directional signs
__ Interpretive signing
__ Path head bulletin boards
__ Access to city destinations

Please write any concerns you may have regarding the proposed path.

_____
_____
_____
_____

Which of these best describes you?

Cyclist:

☐ An advanced, confident rider who is comfortable riding in most traffic situations
☐ An intermediate rider who is not really comfortable riding in most traffic situations
☐ A beginner rider who prefers to stick to the bike path or path

Pedestrian:

☐ An avid walker who walks daily
☐ A regular walker who walks 1 to 2 times weekly
☐ An occasional walker who walks 1 or more times per month

Optional Information:

Name: _____ Age: ____
Address:
_____
E-mail address:
_____

The information you have provided will be used by the City and its consultants to ensure the community's needs are properly reflected in the "Foss Creek Path" project designs. It is anticipated that path implementation will largely be funded by regional, state, and federal sources. Thank you for helping us plan a better community.

Please return this survey to: City of Healdsburg, Community Development Department
401 Grove Street Healdsburg, CA 95448 (707) 431-2710 Fax Attn: Andy Gustavson

Pathway Public Survey

- Pedestrians

Pedestrians are an active user group on multi-use pathways. Pedestrian activities encompass a broad range, from work commuters to casual strollers to those exercising their pets or seeking lunchtime exercise to interpretive walks, and every-thing in between. While people walking to work may use a pathway for its directness of route, casual strollers typically prefer a facility with amenities such as benches, fountains, public art and interpretive opportunities. To meet the needs of older adults and people with disabilities, accessible facilities should be developed with smooth hard surfaces, ADA-compliant gradients and pullouts or rest areas.

Pedestrians enjoying the Pathway's Downtown Reach

Conflicts can occur between pedestrians, bicyclists and in-line skaters due to their varying range of motion. Depending on the volume of traffic, pedestrians may need to be separated from faster moving bicyclists and skaters for their own safety. Safe multiple use requires everyone's cooperation. Each user will need to exercise common courtesy.

Approximately 43% of the survey respondents identified themselves as regular or avid walkers likely to use the proposed pathway on a regular basis. Additionally, there are several destinations along the proposed pathway that are expected to attract or generate pedestrian as well as bicycle trips. These include Memorial Beach Park, the Railroad Depot/Intermodal Transit Facility, the downtown shopping district, and existing and future high-density housing along West Grant Street and Grove Street, among others.

- Cyclists

Cyclists that will use the pathway include commuting cyclists, commuter cyclists and utilitarian cyclists.

Bicycle commuters in Sonoma County primarily include employees who ride to work and students who ride to school. These commute trips are relatively short, typically less than three miles. Bicycle access to a nearby public transit facility can extend the range of these commute trips. The pathway will help improve bicycle access to the Sonoma County Transit system by providing access to bus stops and to park and ride lots at the Railroad Depot/Intermodal Transit Station and the existing Grant Avenue Park and Ride lot.

Commuter bicyclists typically fall into one of three categories: adult employees, students and shoppers. They exhibit the following characteristics:

- Commuter trips usually range from several blocks to ten miles.
- Commuters typically seek the most direct and fastest route available.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to safely store bicycles are of paramount importance to all bicycle commuters, but particularly during wet winter months.

- Major commuter concerns include changes in weather (rain and extreme heat), riding in darkness, personal safety and security.
- In general, a primary concern to all bicycle commuters is intersections with no stop signs or signal controls - a situation where motorists are less likely to see non-motorized users.
- Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.

Recreational cyclists generally fall into one of three categories: exercise, non-work destinations and sight seeing. The term "recreational" cyclist covers a broad range of skill and fitness levels. They can range from a racer who does 100-mile rides each weekend to a family with young children who occasionally want to ride a couple miles down a quiet bike path.

A bicycle racer more typically prefers direct, long distance routes, with minimal stops and challenging terrain. Riding next to traffic, with or without a wide shoulder, is not a critical concern for this type of rider. A casual cyclist, on the other hand, usually prefers to ride off-street or on roads with very low traffic volume, with as few traffic conflicts as possible. Directness of route is typically less important than being in scenic surroundings, having amenities like restrooms and water fountains, and the availability of shorter routes and loops between destinations. Casual cyclists consider visual interest, shade, wind protection, moderate gradients and artistic or informational features to have a high value. Also, a cyclist's level of skill, fitness and comfort riding with traffic will determine what type of facility they will select. The pathway will serve the entire range of recreational cyclists because it will provide a direct route through Healdsburg, minimize traffic conflicts found on parallel streets, including Healdsburg Avenue, and offer many shorter connections between local parks, schools, shops, employment centers and neighborhoods.

Utilitarian cycling trips refer to the use of the bicycle for shopping, errands and other miscellaneous local trips. Most residents of Healdsburg have shopping and public facilities (libraries, post offices, etc.) located in close proximity to their neighborhoods. Due to the location of the Foss Creek Pathway, these users will be able to use the pathway for utilitarian trips such as errands.

3.3 Pathway Vision Statement, Goals and Policies

Beginning with a "vision statement," the overall goals and policies for the Foss Creek Pathway project are identified below. The vision statement is a guiding image of what the project should achieve.

The goals and policies reflect community priorities identified by the survey and expressed at public meetings, as well as the City's intent to create an attractive and safe pathway that does not interfere with railroad operations.

Vision Statement

Develop a safe, multi-use pathway through the City of Healdsburg that helps address the access and mobility needs of its pedestrians and bicyclists as well as the adjacent unincorporated County, in a manner that enhances community identity and livability.

Goal A **Provide safe conditions for all pathway users**

Policy A.1 Maximize safety for all users through the pathway corridor, especially children and the disabled.

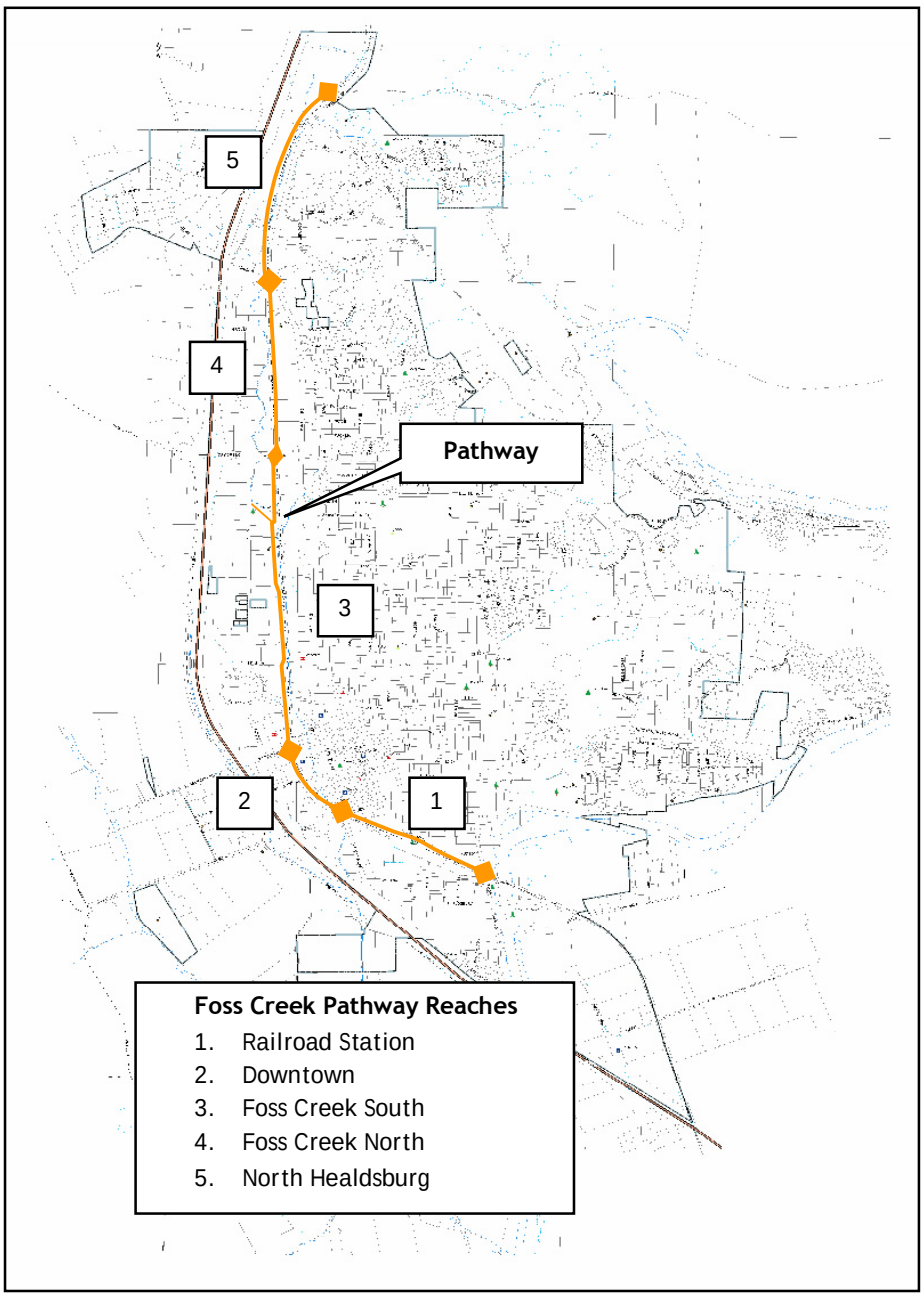
Policy A.2 Accommodate the diverse capabilities of pathway users.

Policy A.3 Minimize potential conflicts among pedestrians, bicyclists, motor vehicles and railroad operations.

Goal B	**Promote pedestrian and bicycle commute trips within the City**
Policy B.1	Design the pathway to maximize connections between residential, employment and commercial areas, and to transit and recreation facilities.
Policy B.2	Promote the pathway as a transportation alternative for local work and recreation trips, as well as to special civic and other events.
Policy B.3	Provide access to public parks and facilities through the pathway.
Policy B.4	Enhance the experience of pathway users by providing landscaping, shade, benches, public art, drinking fountains, milepost markers and refuse receptacles.
Goal C	**Protect and enhance the resource value of Foss Creek**
Policy C.1	The pathway should be located adjacent to or near Foss Creek where possible.
Policy C.2	Pathway improvements should minimize impacts to the riparian habitat of Foss Creek.
Policy C.3	Pathway plantings and future activities in the corridor should enhance the riparian habitat and vegetation of Foss Creek.
Policy C.4	Access to Foss Creek and its riparian habitat should be provided from the pathway where feasible to offer educational opportunities and allow creek clean-up and restoration.
Goal D	**Maintain compatibility with surrounding land uses**
Policy D.1	The pathway should be compatible with adjoining land uses.
Policy D.2	Acquire property or easements over private property to build the pathway only when encroaching structures and/or riparian vegetation (or other environmentally-sensitive habitat areas) make it infeasible to build the pathway within the railroad right-of-way or on public land.
Goal E	**Avoid interference with railroad operations**
Policy E.1	The location and use of the pathway within or adjacent to the railroad right-of-way shall not prevent railway maintenance activities.
Policy E.2	The location and use of the pathway shall accommodate railroad activities and shall not preclude future railroad operations in the right-of-way.

4 Pathway Alignment and Access

The following section describes the pathway alignment and access for five individual reaches of the pathway, from south to north. The land use character, roadway and railroad crossings, and pathway construction constraints are described for each reach. The pathway reaches are defined by the plan because they are self-contained segments that can be developed separately as funding allows. Each reach is illustrated in this section to show the general location of the pathway alignment. The Pathway Alignment Details more precisely show pathway alignment and improvements in relation to the railroad track, Foss Creek, and nearby buildings and other features.

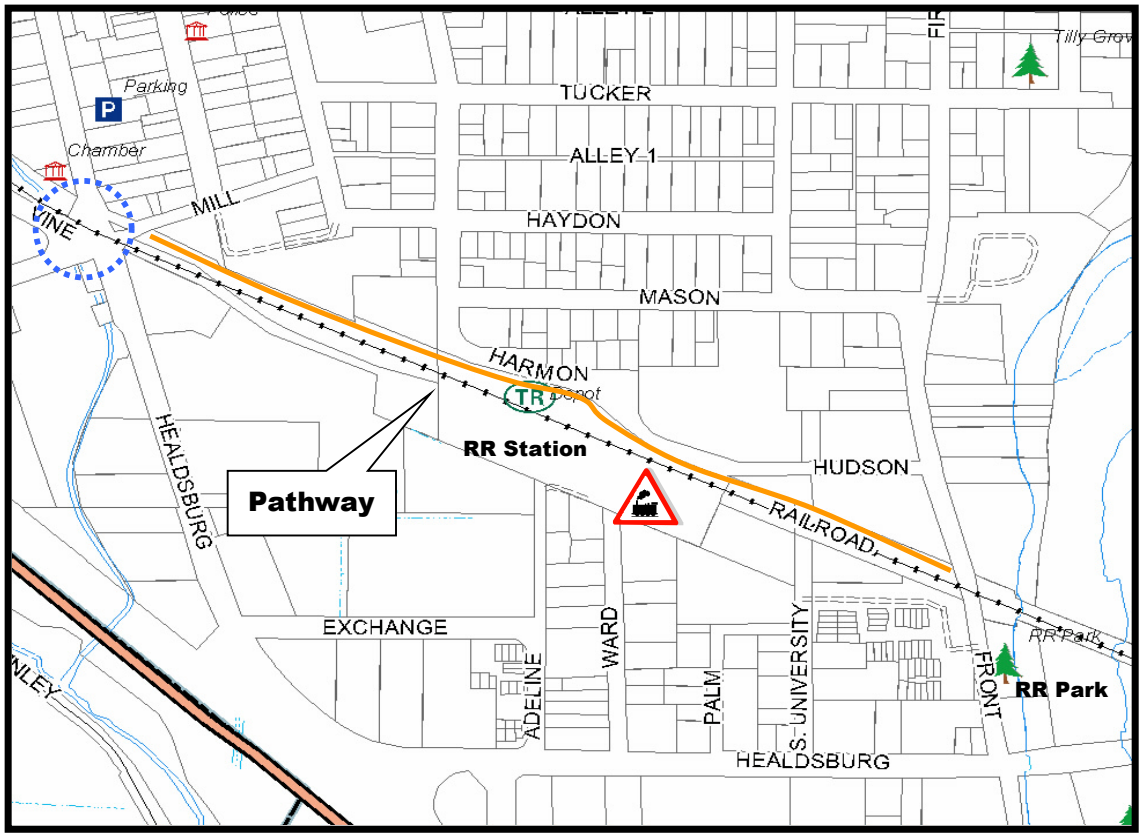


4.1 Railroad Station Reach

Location

The Railroad Station Reach will run between Front Street and Healdsburg Avenue, a distance of approximately 2,150 feet. The south entrance to the Foss Creek Pathway lies on Front Street, which runs north-south along the Russian River and intersects with Healdsburg Avenue at the Memorial Bridge. The pathway in this reach will run along the north side of the NWP right-of-way and track, which extends east-west past Healdsburg's historic train station to the Healdsburg/Vine/Mill intersection.

The pathway will pass by the businesses on Hudson Street, Railroad Park on Front Street and the residential neighborhood north of the train station. It will improve pedestrian and bicycle access to the neighborhoods in the southern part of the city by linking to the bicycle route on Front Street and the bicycle lane on Healdsburg Avenue (Old Redwood Highway).



Railroad Station Reach

Funding and Timing

Construction of the pathway within this reach is funded by state and federal grants. A portion of the grants awarded by the Northern Sonoma County Air District (VPMP) and Metropolitan Transportation Commission (Article 3, TDA) will be used to construct the segment from Front Street to the train station. The segment between the train station and Healdsburg Avenue will be built as a joint city/county project to establish an intermodal transit facility and to restore the historic buildings at the train station.

Opportunities and Constraints

- The pathway's entrance on Front Street is a good spot for a trail information kiosk and an entry staging area.
- The pathway will help facilitate commuter access to the planned intermodal transit facility.
- The historic train station is a good site for an interpretative sign, plaque or commemorative sculpture about railroad history within the city.
- Construction of the pathway may require the removal of vegetation at the Front Street entrance, including several mature pine trees along the north edge of the NWP right-of-way and bushes growing within the existing railroad drainage ditch.

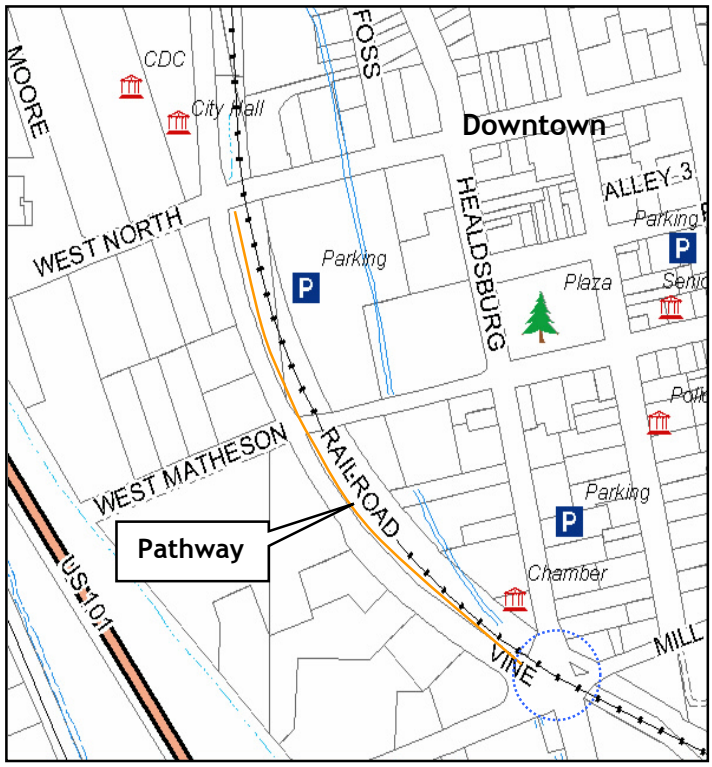
Historic Healdsburg Station will be renovated into a new intermodal station

- Storm drain improvements are required to alleviate localized flooding that occurs at the Front Street pathway entrance. The City plans to improve the existing storm drain and may need SMART's approval to repair storm drains within the NWP right-of-way.
- The pathway must be routed past the historic train station site so that it does not conflict with the parking lot, pedestrian walkways, and building improvements associated with the planned intermodal transit facility.
- A building and steep bank restricts the pathway alignment within the NWP right-of-way north of the railroad station. A railroad setback exception and solid barrier may be required to build the pathway past this building.

4.2 Downtown Reach

Location

The Downtown Reach lies between Healdsburg Avenue and North Street and covers a distance of approximately 1,555 feet. After crossing the street and the railroad tracks at the Healdsburg/Vine/Mill intersection, the pathway runs for two blocks within a wide undeveloped strip that lies between the NWP tracks and Vine Street. It crosses Matheson Street at the existing pedestrian crosswalk, just west of the railroad crossing, before it



Downtown Reach

continues another block and ends at North Street. Foss Creek runs along the east side of the railroad tracks in this reach and is not within the immediate vicinity of the pathway.

The pathway lies just west of the West Plaza Parking Lot, the Plaza and the downtown shopping district. It also runs past the Vineyard Plaza shopping center and provides access to the light manufacturing district west of Vine Street, one of the City's major employment areas. Finally, the city's administrative offices are located at the north end of this reach. The pathway directly connects with Matheson Street, which is a designated bicycle route to the downtown and the residential district to the east. It also ties into Mill Street, which the City and the County designate as a bicycle route and which provides access to popular rural cycling roads to the west.

Funding and Timing

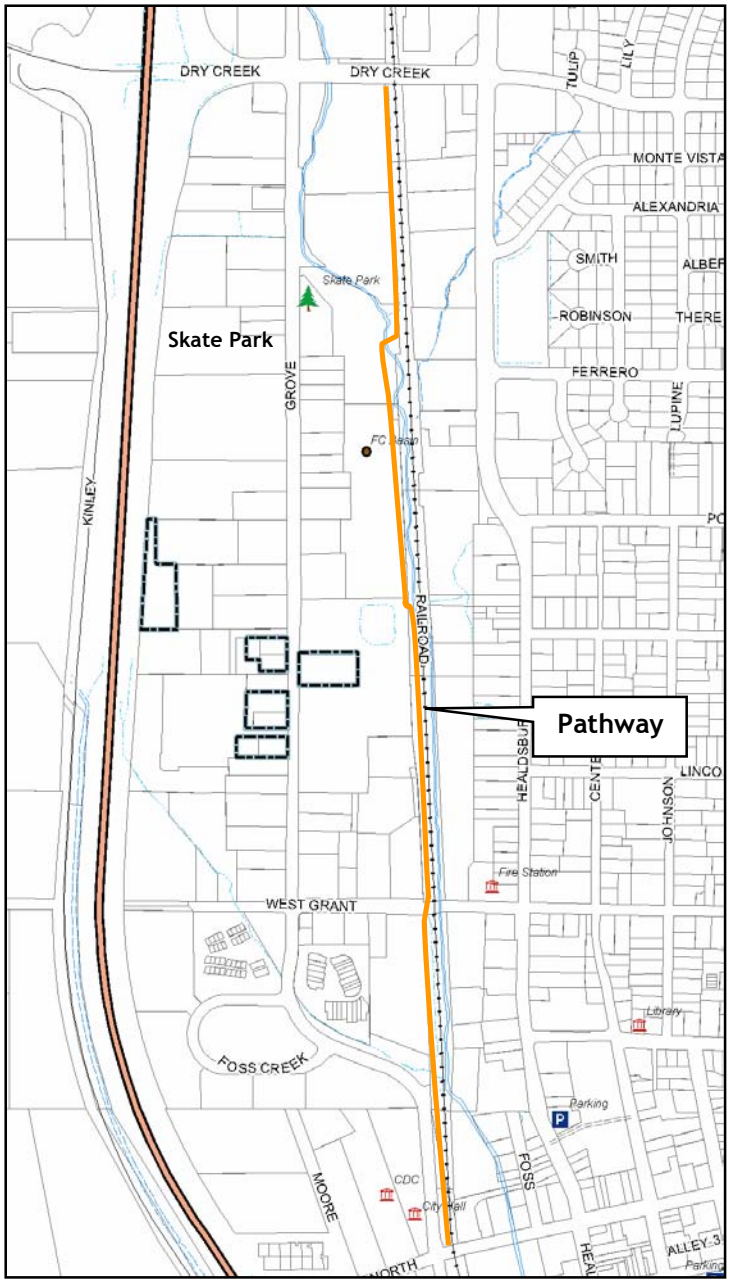
The City constructed this reach in the fall of 2005 using grants awarded by the Northern Sonoma County Air District and the Metropolitan Transportation Commission (Article 3, TDA).

4.3 Foss Creek South Reach

Location

This reach will start at North Street and continue along the west side of the NWP on its way to Dry Creek Road, a distance of 6,000 feet. There is only one street crossing in this reach, an unprotected crossing on West Grant Street, just west of the NWP railroad crossing. Immediately north of this street crossing, the pathway will pass through a 700-foot long section where adjoining buildings have encroached upon the NWP right-of-way. In some places, the buildings are less than 25 feet from the track centerline. There is another narrow section at the north end of the reach where a 1,000-foot segment of the NWP right-of-way width is about 45 feet.

The pathway will leave the right-of-way in two places to avoid sensitive wetland areas. The first area is a deep drainage ditch, containing dense riparian vegetation, south of West Grant Street. The other is near the detention basin where Foss Creek occupies the right-of-way and has



Foss Creek South Reach

eroded the NWP track. In both instances, the pathway can avoid these areas by entering city-owned property. It may, however, have to cross the northeast corner of the Seghesio Winery property to reach the detention basin levee maintenance road and to avoid Foss Creek.

The pathway makes two waterway crossings in this reach. The first is at Norton Slough, which the pathway would cross by a 75-foot long bridge located next to an existing railroad bridge. There is extensive riparian vegetation in this area. The second crossing is a 60-foot long bridge over Foss Creek where it flows within the oak woodland situated northeast of detention basin. After the pathway crosses over the creek, it continues north within the NWP right-of-way to Dry Creek Road. Foss Creek diverges away from the railroad at this point and runs northwest alongside the detention basin to Grove Street. A short pathway spur is planned to follow Foss Creek and connect with the Carson Warner Memorial Skate Park and Grove Street.

Land uses adjacent to this reach of the pathway range from public and residential at its south end to industrial and open space at its north end. City Hall (401 Grove Street) and the Healdsburg Montessori School (500 Grove Street) are public/quasi-public uses located on Grove Street. The city's vacant property at 20 W. Grant Street is planned for development with high-density affordable housing. The industrial uses begin on the north side of W. Grant Street with McIntyre Tile Company (55 W. Grant Street) and include Seghesio Winery, Empire Mini Storage (1200 Grove Street) and an equipment storage yard at the north end of the reach adjacent to Dry Creek Road. Foss Creek Detention Basin and Carson Warner Memorial Skate Park dominate the center of the reach. The detention basin and the park form the most significant open space area along the pathway and are expected to be the destination of many pathway users.

Opportunities and Constraints

- Entry gateway signs should be posted at the Grove Street access because of the expected high number of pathway trips generated by the skate park.
- Interpretive signs and sitting areas should be established along the pathway within the detention basin area and in the oak woodland. The riparian setting would be an appropriate setting for natural history information.
- Reduced pathway width and solid fence barriers will be required where buildings encroach upon the NWP right-of-way (i.e., McIntyre Tile Company) and where the right-of-way is narrow adjacent to Empire Mini Storage.
- Vegetation removal, grading, fill and retaining walls (exceeding three feet) may be needed at the northeast corner of the Seghesio Winery property to avoid Foss Creek.
- The pathway over the detention basin must not alter the elevation of the basin's inlet and outlet.
- Traffic engineering analysis is needed to determine the most appropriate type of crossing at Dry Creek Road. Options include signalized intersection, pedestrian initiated crossing signals, pavement markings and warning signs.

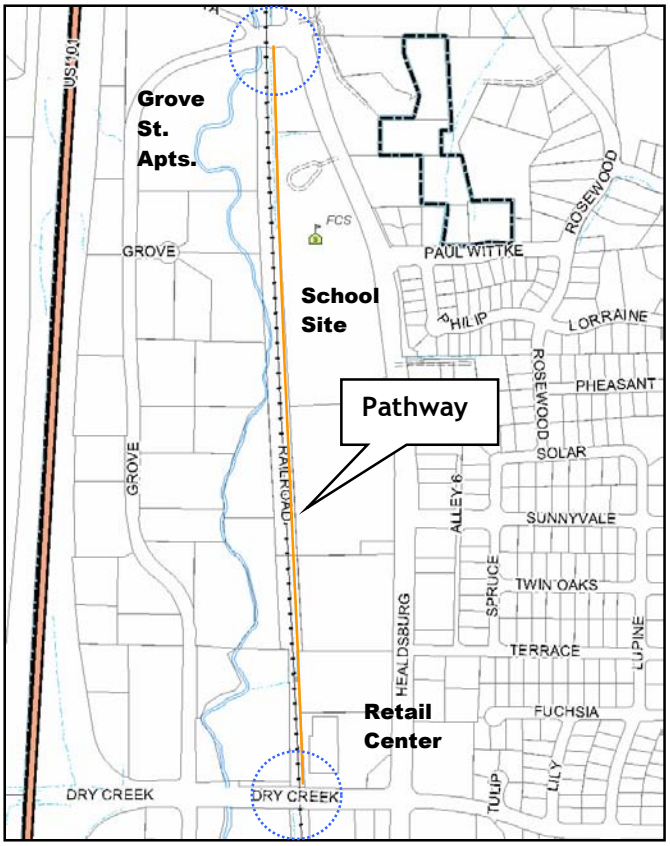
This parcel at Grove and Healdsburg Ave. could potentially serve as a trail head

The NWP crossing at Grant Street

4.4 Foss Creek North Reach

Location

The pathway is proposed to run along the east side of the NWP track in the Foss Creek North Reach, switching sides as it crosses Dry Creek Road and enters the reach from the south. This reach ends 3,185 feet to the north at Grove Street. The terrain within the wide right-of-way is level and free of trees or other significant vegetation. The pathway could lie 25 feet or more from the track centerline, with the exception of the first 600 feet north of Dry Creek Road. The existing (and planned) parking lot at the back of Big John's Market (1345 Healdsburg Avenue) and the existing vehicle storage lot behind McConnell Chevrolet automobile dealership (1395 Healdsburg Avenue) reduce the right-of-way in this area.



Foss Creek North Reach

Prior to the construction of this pathway segment, a potential alignment on the west side of the railroad tracks will be further studied to determine if it would be feasible to locate the pathway along Foss Creek. Should this location become the preferred alignment, additional environmental studies would be required to determine its impacts and identify needed mitigation.

Dry Creek Road is a major four-lane arterial roadway that provides access between US 101 and the residential neighborhoods in northern Healdsburg. The west end of the road is developed with highway commercial businesses while the east end is developed with local-serving commercial uses. This road also serves as the gateway to Dry Creek Valley, about one-half mile to the west. The Geysers wastewater pipeline enters the NWP right-of-way just north of Dry Creek Road and runs along the east side of the railroad track. The eastern pathway alignment would run over the top of the pipeline for most of this reach.

Grove Street Apartments and the former Foss Creek Elementary School campus are located at the north end of the reach, as well as a future 66-unit condominium project. The former school's existing parking lot, located less than one block from the pathway, may provide parking and access to the pathway. The shared use of the parking lot for this purpose will require approvals from the future owner of the school property.

Opportunities and Constraints

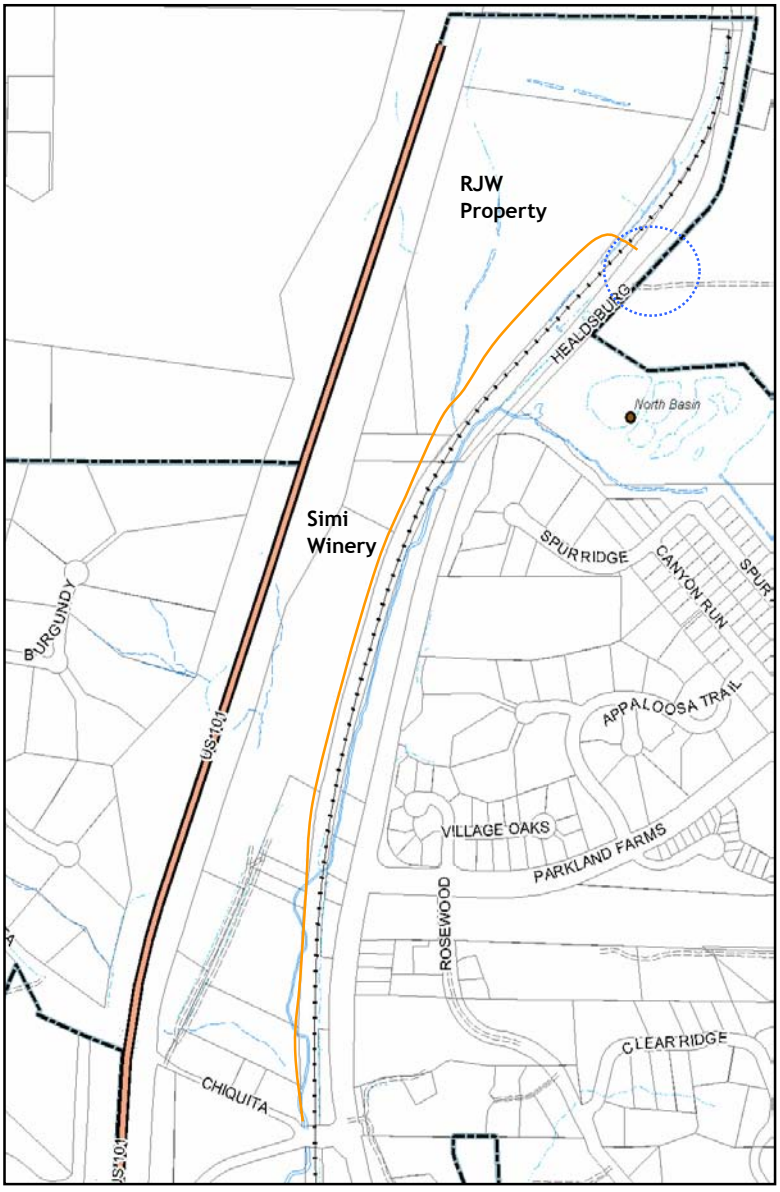
- If the pathway is located on the east side of the tracks, the straight and level pathway would be an attractive alternative to Healdsburg Avenue and Grove Street for bicyclists commuting to work or riding to destinations in downtown Healdsburg.
- The pathway's proximity to Grove Street Apartments, the Chiquita Grove Condominiums and the former Foss Creek School site will encourage use of the pathway.
- A gateway should be developed at the north end of the pathway, possibly including public art.

- The eastern alignment of the pathway would be constrained by the driveway and parking area behind Big John's Market and by the vehicle storage lot at the back of McConnell Chevrolet.
- SMART Design Guidelines identify that a solid barrier would be needed alongside the pathway between Dry Creek Road and McConnell Chevrolet.
- The pathway's location over The Geysers pipeline within the NWP right-of-way would require that it be constructed and managed to accommodate pipeline, as well as railroad, maintenance and repair activities.
- The western alignment of the pathway would likely require at least two creek crossings and easements through several privately-owned industrial properties.

4.5 North Healdsburg Reach

Location

The North Healdsburg Reach lies between the intersection of Grove Street and Healdsburg Avenue and the northern city limits, a distance of approximately 4,050 feet. The pathway would extend north from Grove Street along the west side of the NWP. It would bridge Foss Creek where the creek passes under the NWP track at the south end of the Simi Winery property (16275 Healdsburg Avenue). Another bridge would be required to cross the ravine at the north end of the winery complex.



The pathway would then traverse the vacant RJW property, exiting the property at an existing railroad crossing and entering the Healdsburg Avenue right-of-way at the north end of the city.

This reach is part of the city's gateway to Alexander Valley. The valley's rural setting changes at the city's north boundary to an urban setting The most significant land uses in this reach include the Parkland Farms Subdivision on the east side of the road and Simi Winery on the west side of the road.

This area is slated for significant development in the future, including a residential subdivision, resort and community park on the 258-acre Saggio Hills property located on the east side of Healdsburg Avenue and north of Parkland Farms. Also, the vacant 21-acre RJW Property adjacent to the northern city limits will likely be redeveloped in the near future.

There are several locations along this reach where Foss Creek and existing buildings encroach upon the railroad right-of-way and obstruct the pathway. The cost of two (possibly three) bridges and of mitigating environmental impacts to Foss Creek make this a difficult and expensive reach to build. For these reasons, it will not be constructed until the City is able to secure adequate funding and address its environmental impacts.

The railroad right-of-way parallels Healdsburg Avenue near the northern city limits

Opportunities and Constraints

- The pathway alignment along the west side of the NWP track would pass through a dramatic natural setting created by Foss Creek.
- The existing private railroad on the RJW property can be used to cross the NWP tracks.
- The north end of the reach is a logical gateway location, possibly including public art.
- The development of the pathway along the west side of the NWP track is constrained by the proximity of Foss Creek and buildings to the railroad and the costs associated with necessary bridges.

The railroad right-of-way narrows to approximately 60 feet as it passes between buildings at Simi Winery

This private grade crossing is located near the confluence of the NWP and Foss Creek

5 Pathway Construction Standards

Since the safety of pathway users is of paramount concern to the City, the pathway will be constructed to meet or exceed the state's standard for a bicycle path (i.e., Class I) and the state's standard for railroad setbacks and for existing "at-grade" crossings. The following principles guide the design and construction of the Foss Creek Pathway.

- The Foss Creek Pathway shall be designed to comply with California Public Utility Commission (CPUC) railroad standards.
- The Foss Creek Pathway shall be designed to California Department of Transportation (Caltrans) Class I standards wherever possible.
- Design standards should meet or exceed Caltrans standards to the maximum extent feasible.
- All design guidelines are resources for the Foss Creek Pathway improvements and amenities, to be supplemented with professional judgment.

In some locations, narrow railroad right-of-way or environmental constraints may require that the pathway design deviate from the Class I width standard to fit the precise conditions of the site, provided the safety of the pathway users is not compromised and railroad operations will not be obstructed.

5.1 Railroad Setbacks

The NCRA and SMART both require that the pathway be located to comply with the railroad setbacks listed in the table below. The intent of the setback is to protect pathway users from hazards associated with train operations, including dragging or loose equipment and wind-borne debris. Preferred setback distances vary between 15 and 40 feet, based on train speed. In no case may the railroad setback be less than 15 feet and then only if there is a solid barrier or fence between the pathway and the track. Most of the pathway will be located between 15 and 25 feet from the track because most of the NWP right-of-way through the City is 40 feet or less. Given that trains will travel through the City at speeds exceeding 25 mph, much of the pathway will have to be developed with an adjoining solid barrier to protect the users from train hazards. Solid barriers can a six-foot high wire fence with climbing vines as well as six-foot high wood and masonry walls.

	Preferred Design		State-Mandated Standard	
Train Speed	Minimum setback	Barrier type	Minimum setback	Barrier type
50-80 mph	40 feet	Solid, 6 feet high	15 feet	Solid barrier
25-50 mph	25 feet	Solid, 6 feet high	15 feet	Solid barrier
<25 mph	15 feet	Solid, 6 feet high	15 feet	Solid, 6 feet high

5.2 Cross Section

The cross section of the pathway should comply with Caltrans standards for a bikeway facility, and allow for emergency, maintenance and construction vehicle access. The recommended path width is 12 feet, which based upon field reconnaissance work appears to be achievable along the vast majority of the railroad right-of-way. Asphalt is a logical and economical surface

choice. Two-foot wide soft shoulders of ¾-inch minus crushed aggregate should be provided on both sides of the path. This provides a setback or "shy distance" from fixed objects along the path edge, serves as a tactile warning device for anyone inadvertently swaying off of the pathway, and provides a soft surface for walking and jogging. Vertical clearance along the path should be a minimum of 10 feet and horizontal clearance should extend 2 feet beyond the path shoulders.

5.3 Construction Details

- Design Speed

The minimum design speed for bike paths is 20 miles per hour, except on sections where there are long downgrades (steeper than 4%, and longer than 500 feet). Speed bumps or other surface irregularities should never be used on pathways to slow bicycles.

- Horizontal Alignment

A 2% cross slope is recommended for drainage, and should generally not be exceeded. The Foss Creek Pathway runs along a linear corridor, and sharp curves are generally not anticipated along the path, except at path entrance/ exit points and at transitions to intersections.

- Grades

Steep grades should be avoided on any multi-use trail, with 5% the recommended maximum gradient. Steeper grades can be tolerated for short distances (up to about 500 feet). The corridor is nearly flat for most of the alignment, although steeper grades will be encountered north of Grant Street where the path transitions away from the rail corridor into the Foss Creek Detention Basin and leading to the adjoining Carson Warner Skateboard Park. A topographic survey will be needed at this location and a ramp structure will need to be designed.

- Structural Section and Surface

The pathway construction should be conducted in a similar manner as roadway construction, with sub-base thickness to be determined by soils condition and expansive soil types requiring special structural sections. Minimum asphalt thickness should be three inches of Type A or Type B, with a ¾-inch minus aggregate base at a depth specifically designed to the site's soil conditions. Maximum path loads will include maintenance and emergency service vehicles, as well as occasional construction equipment.

Though there have been recent paths constructed using standard Class F asphalt mix to achieve permeability, use of this mix is not recommended due to the lack of historical data showing it can maintain its permeability over time and that it is economical to maintain. If data can be compiled on existing applications of Class F mix supporting assumptions that it can be economically maintained in use as a bike path, Class F mix should be considered in areas of high soil permeability. In general, the lower the permeability, the higher chance of failure for the class F mix. In lieu of use of a permeable pavement, the path should be cross-sloped to drain water away from Foss Creek and natural resource areas.

- Drainage

The 2% cross slope will resolve most drainage issues for the pathway, except along cut sections where run off must be collected in a ditch and directed to a catch basin, where the water can be directed under the path in a drainage pipe of suitable dimensions. Topography along the rail right-of-way is flat. Over the years, development has occurred around the right-of-way and has utilized it as a default drainage area.

Much of this system relies on former trackside ditching, which, through minimal maintenance over the years, has deteriorated. It is critical to maintain the existing established drainage pattern along the rail right-of-way and enhance the system where feasible. In some cases culverts will be necessary to facilitate the path construction as indicated on the illustrated pathway plans. It is anticipated that the majority of drainage improvements in the corridor will

Bikeway Design Standards

By law, bicycles are allowed on all roadways in California. (The State can prohibit bicyclists from freeways if a suitable alternate route exists.) However, some roadways are better suited for bicycling than others. Caltrans has developed three "classes" of facilities with design recommendations to designate preferred bikeways.

Class I: Typically called a "bike path," a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from nearby streets or highways. They are intended to provide opportunities not available streets and roads, including recreation or high-speed bicycle commuting. The recommended width of a shared use path is dependent upon anticipated usage:

- 8' (2.4 m) is the minimum width, most applicable to unpaved and/or rural facilities
- 8' (2.4 m) may be used for short neighborhood connector paths (generally less than one mile in length) due to low anticipated volumes of use
- 10' (3.0 m) is the recommended width for a two-way bicycle path
- 12' (3.6 m) is the preferred width if more than 300 users per peak hour are anticipated, and/or if there is heavy mixed bicycle and pedestrian use
- A minimum 2' (0.6 m) wide graded area must be provided adjacent to the path to provide clearance from trees, poles, walls, guardrails, etc. A yellow centerline stripe is recommended to separate travel in opposite directions.

Class II: Often referred to as a "bike lane," a Class II bikeway provides a striped and stenciled lane for one-way bicycle travel on a street or highway. Bike lanes delineate separate rights-of-way for bicycles and vehicles to provide more predictable movement for both. The width of the bike lanes vary according to parking and street conditions:

- 5' (1.5 m) minimum when parking stalls are marked
- 11' (3.3 m) minimum for a shared bike/parking lane where parking is permitted but not marked on streets without curbs; or 12' (3.6 m) for a shared lane adjacent to a curb face
- 4' (1.2 m) minimum if no gutter exists, measured from edge of pavement
- 5' (1.5 m) minimum with normal gutter, measured from curb face; or 3' (0.9 m) measured from the gutter pan seam

Other important bike lane requirements involve signing, striping, and stenciling:

- A bike lane should be delineated from motor vehicle travel lanes with a solid 6" white line, per MUTCD. An 8" line width may be used for added distinction.
- Word and symbol pavement stencils should be used to identify bicycle lanes, as per Caltrans and MUTCD specifications.
- The R81 "Bike Lane" sign is required at the beginning of all bike lanes, at all major changes in direction, and at a maximum of 1 km intervals.

Class III: Usually referred to as "bike routes," Class III bikeways are facilities shared with motor vehicles but which provide - through signage, design, and connection to other facilities - advantages to bicyclists not available on other streets or roadways.

Class III facilities can also be shared with pedestrians on a sidewalk although it is strongly discouraged. There are no recommended minimum widths for Class III facilities, but when encouraging bicyclists to travel along selected routes, traffic speed and volume, parking, traffic control devices, and surface quality should be acceptable for bicycle travel.

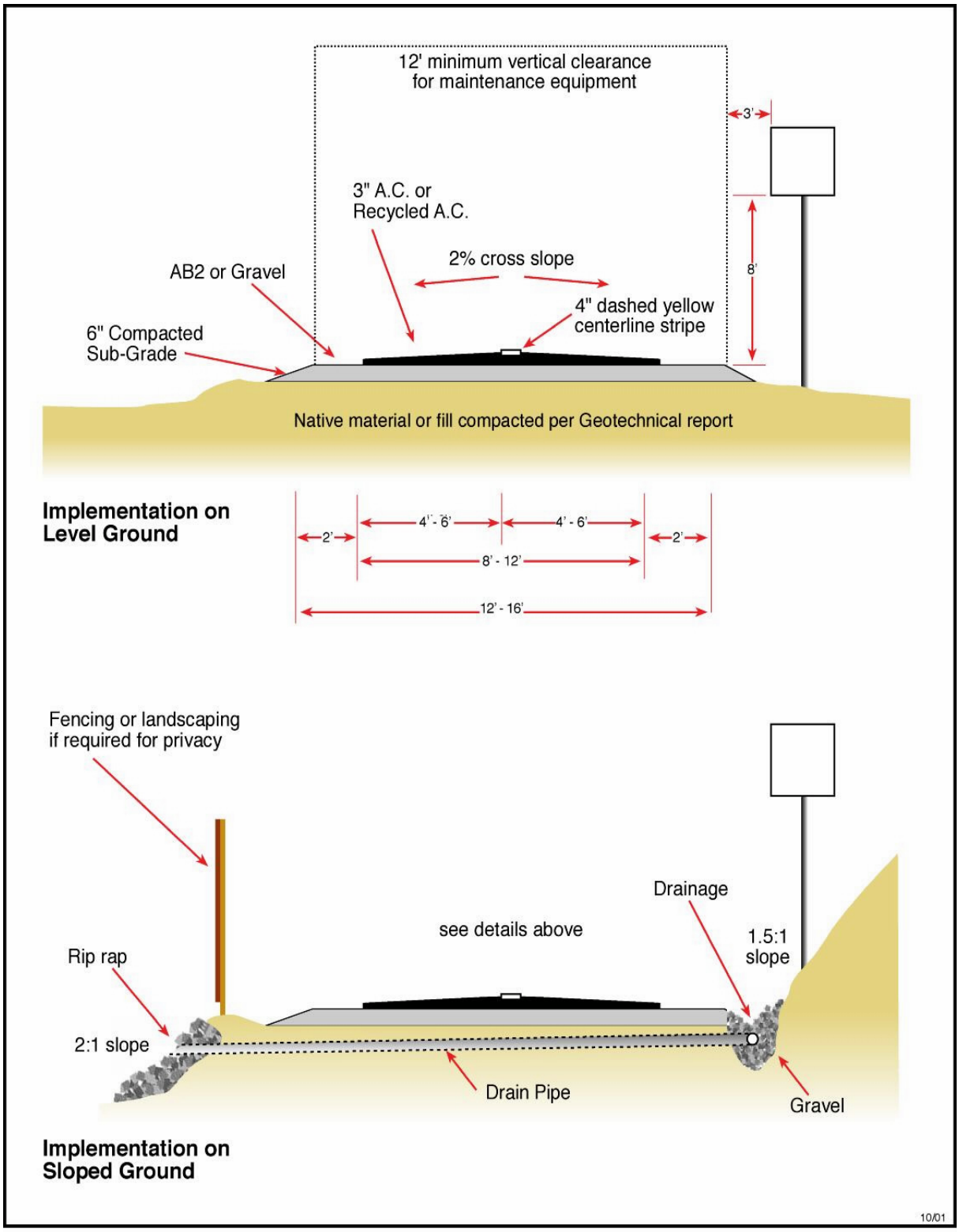
Bicycle boulevards are a type of Class III facility that have certain design features that give preference to bicyclists. Commonly used devices found on bicycle boulevards are traffic diverters that allow through access for bicyclists, two-way bicycle travel on one-way streets, and special signage.

Resources:

Caltrans *Highway Design Manual*, "Chapter 1000: Bikeway Planning and Design," 2001.

Manual on Uniform Traffic Control Devices, "Part 9 – Traffic Controls for Bicycle Facilities," 2001.

Guide For The Development Of Bicycle Facilities, American Association Of State Highway And Transportation Officials (AASHTO), 1999.



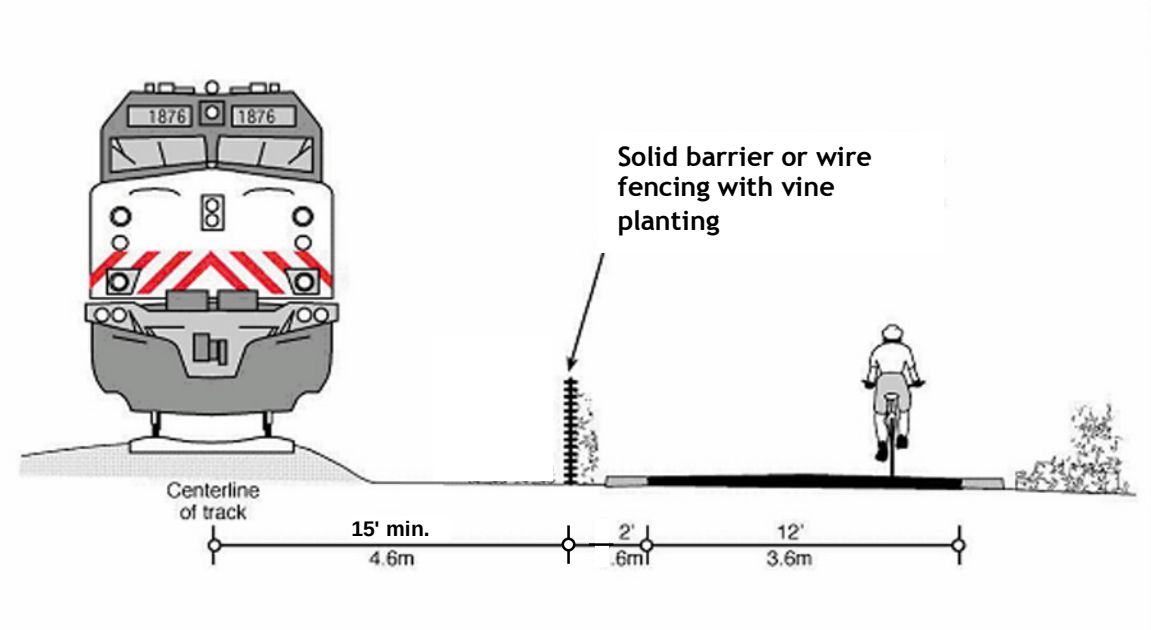
Typical Class I Pathway Cross-Section

be implemented by SMART as a component of track replacement. Since it is anticipated that the Foss Creek Pathway will be constructed prior to track replacement, it is critical that railroad improvements preserve the drainage developed for the path.

5.4 Railroad Accommodation

- Roadway Separation

The pathway should be located five feet or more from a parallel street unless a fence or a landscape barrier is placed between the pathway and street. Wherever possible, the pathway should not closely parallel a roadway because driveways and road traffic create "side" friction that may cause interference between pathway users and motorists. Most experienced bicyclists will choose to ride on a roadway in this situation to avoid potential conflicts.



- Railroad Fencing

A six-foot high solid fence or barrier, located no closer than 15 feet to the track centerline, is required to separate the pathway from the railroad. The NCRA and SMART will increase the setback requirement based on train speed and available right-of-way. The purpose of the fencing is to protect pathway users by blocking wind wash and flying debris generated by passing trains and to create a barrier that will prevent trespass over the railway.

The NCRA and SMART have agreed that a wire fence covered with vine planting is acceptable, provided it is allowed to grow over the fence to form a solid barrier that blocks the wind.

The fence should be constructed in individual segments up to approximately 100 feet in length, with posts inserted in embedded foundation sleeves, so selected segments can be temporarily removed as required for railroad maintenance access. Where fencing runs adjacent to Foss Creek, the bottom should be installed a few inches above the pathway level to permit the passage of small animals.

- Private Property Fencing

Typically, private property fencing along the pathway is used to prevent trespass, enclose hazardous sites and to provide privacy screening. In general, the private properties along the pathway are already fenced along the railroad right-of-way. The pathway will pass a few unfenced properties including the site where the City plans to develop a high-density residential project on West Grant Street and along the rear yard of residential lots located

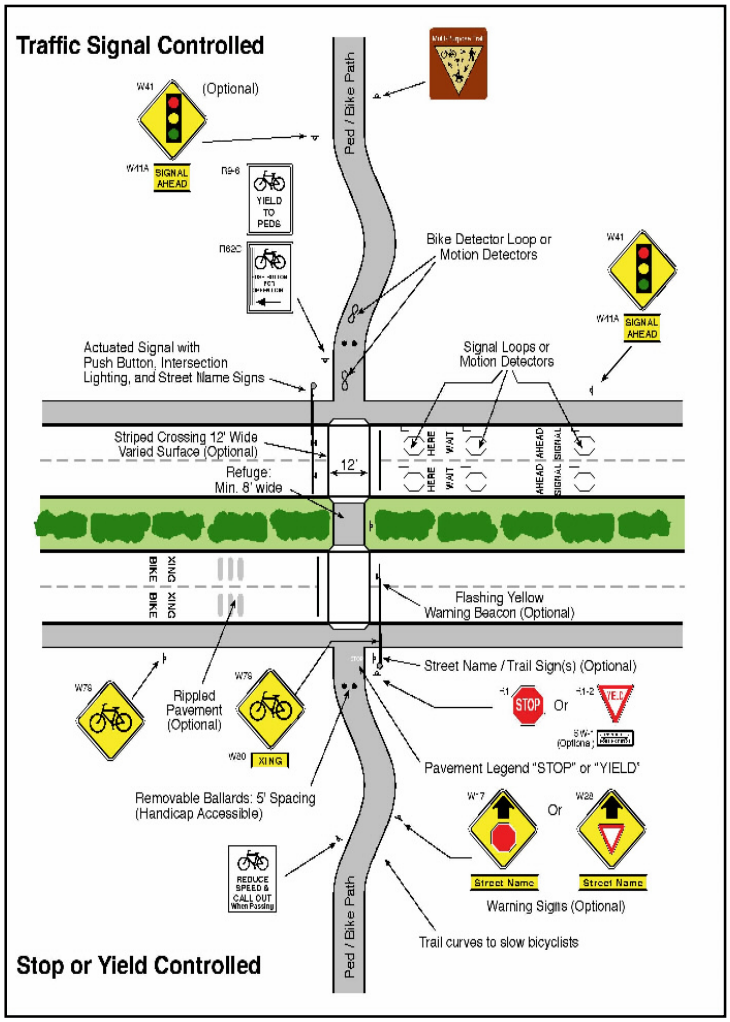
north of Grove Street and west of Foss Creek. Fencing may also be required where the pathway would pass through the Simi Winery complex. To the extent possible, fencing of both sides of the pathway should not be allowed because it will create a "tunnel" effect where the pathway user may feel trapped.

Private property fencing along the pathway should be constructed with black open wire material. Solid fencing that does not allow any visual access to the path should be discouraged. Fencing that allows a balance between the need for privacy, while simultaneously allowing informal surveillance of the path, should be encouraged. If fencing is requested purely for privacy reasons, vegetative buffers should be considered.

5.5 Pathway Crossings

- Road Crossings

When the pathway must cross a road, it must be routed to a protected intersection (i.e., crosswalk with a stop sign or traffic signal) if the intersection is within 350 feet of the pathway. A barrier and directional signing is required to pre-vent pathway users from crossing at the unmarked location. Signs warning motorists of the presence of bicycles may be needed, as well as right turn on red prohibitions when pedestrians and bicyclists are present. High-speed curve geo-metry and free right turns should be replaced with tighter radii to help slow vehicles. Widening and striping the sidewalk (if possible) between the pathway and intersection may help to alleviate potential conflicts between pedestrians and bicyclists.



Mid-block crossing

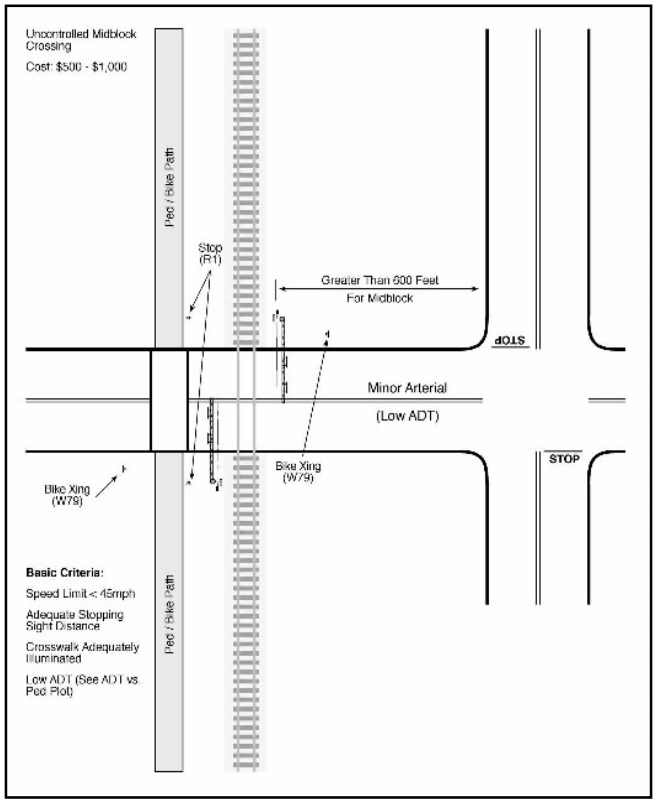
This standard applies to pathway road crossings at North Street, Healdsburg Avenue, Matheson Street and Grove Street. It is needed because motorists do not expect to see pedestrians and bicyclists crossing the street so close to an intersection. Also, traffic backed up at a nearby intersection may obstruct a mid-block crossing. In addition to the potential safety hazard to the pathway user, mid-block crossings may slow street traffic and reduce its traffic capacity.

Mid-block, or unprotected, crossings are only appropriate when the pathway is located more than 350 feet from a protected crossing and when signals and signs are used to alert motorists and the pathway users. The above figure shows how a variety of elements are used to create a

safe mid-block crossing. There would be two such crossings along the pathway, one at Grant Street and another on Dry Creek Road.

- Railroad Crossings

The Foss Creek Pathway will cross the NWP at existing railroad crossings located at Healdsburg Avenue and Dry Creek Road. The pathway in the Healdsburg North reach will cross an existing railroad crossing at Grove Street. An existing private crossing on the RJW property will be required if the alignment along the NWP right-of-way is selected. Each pathway crossing of the NWP will occur within existing roadway/pedestrian at-grade crossings. It will be necessary to obtain the CPUC's approval to improve these crossings. Typical improvements required by the CPUC include railroad warning signs, stencils and overhead lights, as well as pedestrian crossing gates.



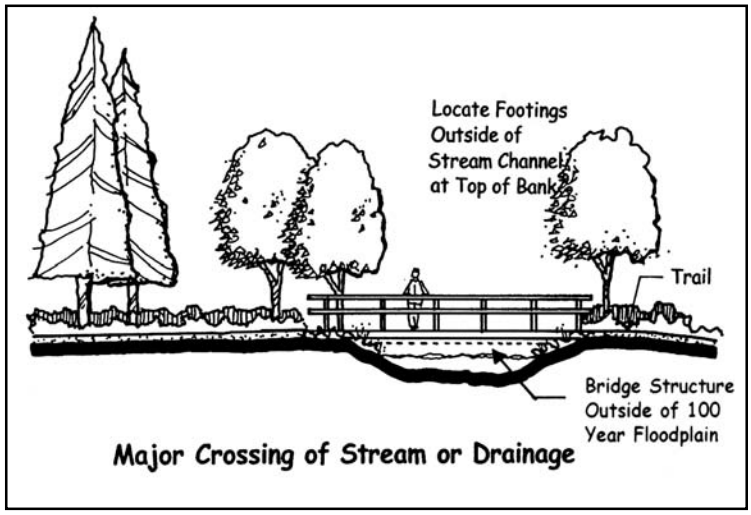
Crossing adjacent to railroad

- Creek Crossings

At least four bridges are needed along the pathway. One will be located adjacent to the Montessori School on Grove Street and another south of Dry Creek Road just east of the skate park. Two more will be needed if the Healdsburg North reach portion of the pathway is contructed along the creek, adjacent to Simi Winery.

Bridges should be designed to span the entire creek floodway, with footings located outside of the channel at top of bank. Bridge design and construction methods should be selected to avoid removal of native vegetation.

Bridge designs will need to withstand loads applied by city and NWP railroad maintenance vehicles, emergency vehicles and occasional construction equipment. Bridges should also be wide enough to allow pedestrians to stop to observe the creek while not impeding other pathway users.



Typical creek crossing

6 Pathway Design Guidelines

The following design guidelines are based upon three main themes or concepts that are notable of Healdsburg and of its outlying area. First, Healdsburg is located in one of the finest wine-producing regions in the world. Vineyards and wineries are common adjacent land uses to the pathway and are an integral part of the community's character. The city's location at the convergence of Dry Creek and Alexander valleys has made Healdsburg an important wine industry center and a significant tourist destination. Second, although it is not currently active, the completion of the railroad line in the 1800's to distant markets is perhaps the most formidable element that shaped the economic development of the city and the other North Bay communities as a significant agricultural region. Finally, and equally important, Foss Creek plays a critical role as the city's longest continuous riparian habitat and drainage corridor. Today, much of Foss Creek is inaccessible as it winds it way through the City. The pathway can transform the creek into a managed open space park that enhances its wildlife and water quality values by replacing invasive plants with native species and by controlling public access along the riparian corridor. By designing the pathway to reflect these themes, it will become a valued transportation and recreation asset and it will build community identity by fostering understanding of local history and of the natural environment.

Freight train on Healdsburg Bridge, 1913

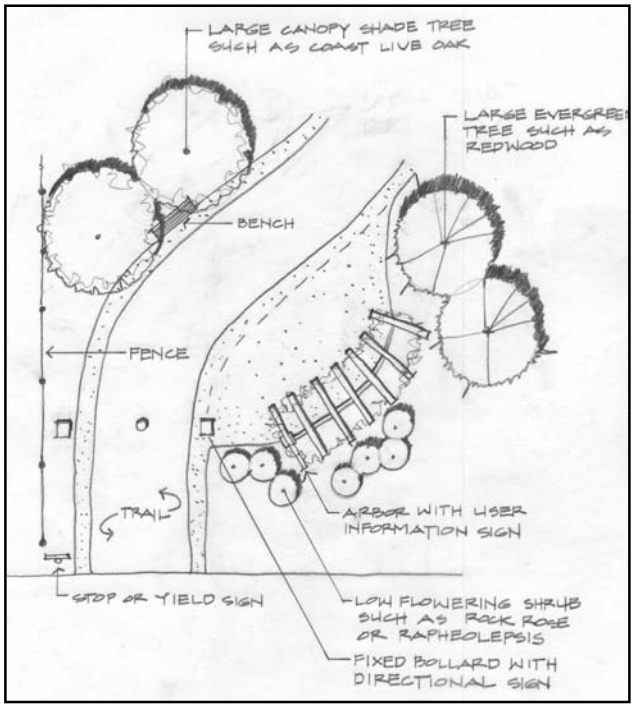
6.1 Site Improvements and Amenities

Each of the pathway elements or site improvements described below, including building materials and pathway amenities, reflect the inherent qualities (e.g., color, texture and material) of Healdsburg and the pathway setting. The pathway should also make use of these materials to help ensure that it is visually harmonious with the railroad and with the agricultural activity in the area.

Wood and metal are key materials we think of when we think of the historic rail line. This came in the form of tracks, steel train wheels, and wood trestles. Wood and metal constituted the key materials used to build the rail line and was used in simple but rather elegant ways. Wood tended to be utilized in heavy timber members (with the intent of structurally supporting the train) with a semi-rustic character to it. Metal, in the form of steel, had a raw quality to it but was polished by use. This theme is consistent with the agricultural practices of grape growing, which includes the use of trellis structures made of wood or metal grape stakes and wire.

- Trailheads

Trailheads serve as formal entries to the pathway. They should ideally be located near parking lots that can serve users arriving to the path by car. There are four areas along the path that logically serve as trailhead access points: Front Street, West Plaza Parking Lot, Grove Street at Carson Warner Memorial Skate Park and the north end of Grove Street at Healdsburg Avenue. The trailhead improvements should use metal and heavy timber to reflect the material used to build the tracks and railroad buildings. Their form should borrow architectural elements (shed roofs, post and beam construction) associated with the railroad buildings as well as from farm buildings and structures found in northern Sonoma County.



Typical Trailhead Site Plan

- Benches

Benches should utilize wood with metal detailing while the use of metal and wood should be encouraged for covered bench areas. The design of the covered structure should be reflective of the historic rail station design. Where appropriate, sturdy benches may also be works of art.

- Drinking Fountains

Drinking fountains should meet ADA requirements and be located at every trailhead.

- Milepost Marker

Mileposts greatly increase use of the pathway by joggers and cyclists looking for set work out distances. Low wooden posts should be located at the side of the trail to avoid obstructing vehicles or bicycles and from becoming a tripping hazard. The recommended spacing is one per one-tenth mile.

- Bollards

Bollards are needed at pathway intersections with streets to minimize unwanted vehicle access. They must be able to be removed to allow maintenance and emergency vehicle access onto the pathway. Posts should be visible to bicyclists and others, especially at nighttime, with reflective materials and appropriate striping.

Bollards at intersection

- Restrooms

Restrooms were one of the top three amenities asked for by city residents. However, they represent a significant development cost, maintenance responsibility and security risk that may make it infeasible for the City to develop restrooms along the pathway. Should the City resolve these issues, they should be located at key activity areas such as parks or trailheads. The design of the restroom structures should be reflective of the local agricultural vernacular. Directional signage to existing restrooms near the pathway should be provided.

- Refuse Control

Garage cans were identified by survey respondents as their top pathway amenity. They should be located at pathway access points and next to benches along the pathway. Pathway etiquette signs should establish a "pack it in, pack it out" policy to promote a litter-free facility. Refuse bags for dogs should be made available at access points and where garbage cans are located.

- Public Art

Public art along the pathway adds interest to the path experience, as evidenced by several pieces that were recently installed adjacent to the Downtown Reach of the pathway. Depending on its scale and form, public art can become an "event" unto itself and serve as a public draw as something to see and experience.

Public art along the Downtown Reach

The opportunity to install public art along the pathway should be a priority for the development of the path. Installation of art in areas of high visibility, such as trailhead access points or near public facilities, should be encouraged.

- Landscaping

Landscaping adjacent to the pathway must respect the sharing of the right-of-way with the rail and will introduce seasonal color and shade. Informal groups of native plant materials near site improvements (e.g., benches, trailheads) that can establish themselves in one or two growing seasons are encouraged. Native species shall be used in any landscaping that is proximate to Foss Creek.

Invasive species shall be avoided to minimize the need for vegetation control or eradication within the railroad right-of-way. Himalayan blackberry is found growing within the corridor. Removal activities should be encouraged along the path and followed up with planting efforts (possibly through volunteer effort) that will ultimately shade out the blackberry.

Groundcovers, shrubs and vines must be water-efficient and capable of withstanding the periodic wind stream created by passing trains and tolerating existing contaminants within the corridor and sub-soils. Irrigation along the path is not anticipated, so truck watering will most likely be needed during the establishment period. Trees should be a mix of deciduous and evergreen species, and should be located at the edges of the rail corridor, providing a windscreen in places.

- Lighting

The provision of lighting along the pathway will increase the sense of security and will improve public safety. Lighting will also expand the pathway use during the evening and year-round. Despite the expense of installing and operating lighting along the pathway, it will create a more secure and usable public facility. Lighting shall be directed away from Foss Creek so as not to disturb nocturnal wildlife.

Lighting along Downtown Reach

6.2 Signs

A comprehensive signage program includes three types of sign types: regulatory, directional, and interpretive. It is important that he pathway's signs be designed with a unified theme to convey a sense of continuity of the pathway, general orientation and safety. As a rule, caution should be exercised to not "over sign" the path. Incorporation of signage into planned pathway structures such as bollards should be encouraged. This will avoid "visual pollution" created by too many signs along the pathway and an excessive number of sign poles.

The Foss Creek Pathway should be designed to include all of the required and recommended signing and marking standards developed by Caltrans in Chapter 1000 of the Highway Design Manual. In addition, all signs and markings should conform to the standards developed in the Federal Highway Administration's *Manual of Uniform Traffic Control Devices* (MUTCD). The final striping, marking, and signing plan for the Pathway should be reviewed and approved by a licensed traffic engineer or civil engineer. Finally, the Pathway should be identified by a consistent, unique logo or design that will help guide people to and on the trail.

In general, all signs should be located three to four feet from the edge of the paved surface, have a minimum vertical clearance of 8.5 feet when located above the trail surface and be a minimum of four feet above the trail surface when located on the side of the trail. All signs should be oriented so as not to confuse motorists. The designs (though not the size) of signs and markings should be the same as used for motor vehicles.

An optional four-inch yellow centerline stripe may be used to separate users on the path. The stripes may be desirable on sections of the rail trail that have heavy usage, curves with restricted sign lines, at approaches to intersections and/or where nighttime riding is expected.

- Regulatory Signs

Regulatory signs are required to provide warnings and traffic control information for pathway users and motorists approaching a pathway road crossing. The type, location, and other criteria are identified in the MUTCD. Consideration must be given for adequate warning distance based on vehicle speeds and line of sight, with visibility of any signing absolutely critical. Catching the attention of motorists desensitized to roadway signs may require additional alerting devices such as a flashing light, roadway striping or changes in pavement texture. Signing for pathway users must include a standard "STOP" sign and pavement marking, sometimes combined with other features such as bollards or a curve in the path to slow bicyclists on their approach to the street crossing. Care must be taken not to place too many signs at crossings or they will result in sign clutter and will negate their impact.

- Directional Signs

Directional signs are useful for pathway users and motorists alike. For pathway users, directional signs and street names at crossings help direct people to their destinations. For motorists, a sign reading "Foss Creek Pathway Xing" along with a path emblem or logo helps both warn and promote use of the trail itself.

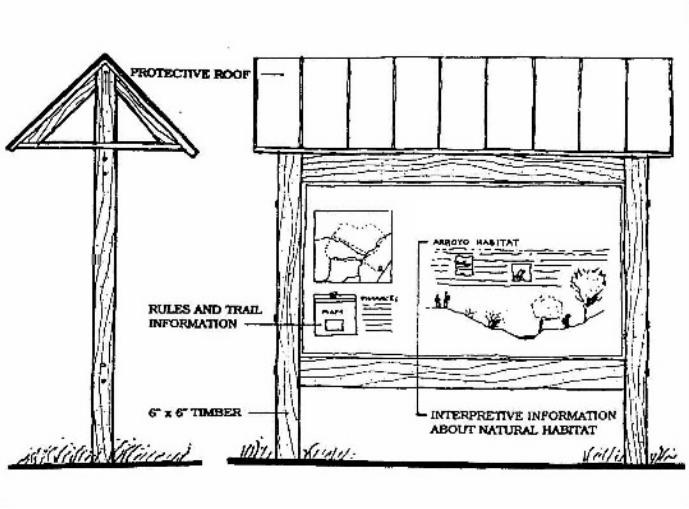
Since pathway entrances on public roads serve as the gateway or access point to the pathway, directional signs should be provided at these locations and should include a location map and an etiquette sign. These signs should be part of an information kiosk, built with materials that reflect the historic Healdsburg railroad station. The path etiquette sign will clearly spell out proper rules and customs for pathway users.

- Interpretative Signs

Interpretive signage provides enrichment to the path user experience, strengthening the uniqueness of the local community and providing educational opportunities.

Key interpretive opportunities include:

- Local creeks and rivers including Foss Creek, Norton Slough and Russian River
- Salmonid species in the Russian River
- Native plants and Foss Creek wildlife
- Water quality
- Rail use - past, present and future - at the restored rail depot site
- Rail use, in view of the former round house location
- Historic neighborhood development
- Land settlement patterns/place name history
- Public art



Interpretative Sign Example

7 Pathway Implementation Plan

In order to implement the Foss Creek Pathway Plan and build the pathway, the City must seek permission from the NCRA and SMART and from the owners of private property over which the pathway is routed. The City will also have to obtain permits and environmental clearance to satisfy state and federal railroad and environmental regulations. It will also have to seek funding to cover the cost of obtaining access easements and permits as well as the cost of preparing plans and constructing the pathway. Finally, the project will be built in phases given that some of the reaches will have funding and will be ready for construction in the short term, while other reaches may have to wait until significant environmental impact and access issues are resolved.

The following sections look at each of these issues and provide a phasing plan to construct the individual pathway reaches as funding and approvals become available.

7.1 Property Owner Permission

Virtually all of the Foss Creek Pathway is located within the NWP right-of-way that is owned either by the NCRA or by SMART. The exceptions include segments of the pathway routed over adjoining city-owned property, where the pathway can locate further from the track, or over adjoining private property to avoid Foss Creek. In all these locations, except where the pathway crosses city-owned land, the City must obtain permission from the landowners, including the NCRA and SMART, to build the pathway. In addition, there are segments of the NWP right-of-way that adjoining property owners have developed or are using under a license from the NCRA. For instance, the City of Santa Rosa has a license from the NCRA to locate and operate The Geysers pipeline in the Foss Creek North Reach. The City of Healdsburg will have to enter into an agreement with Santa Rosa to ensure that access will be allowed to maintain and repair the pipeline. In addition, NCRA has issued a license to allow Big John's Market to expand its parking into the NWP right-of-way just north of Dry Creek Road. The City needs an agreement with the license holders and the NCRA to route the pathway through these segments.

The City was able to build the Downtown Reach under a license issued by the NCRA. The NCRA will have to agree to amend this license to allow the City to extend the pathway north to the city limit line. The City should also seek to increase the license term from 25 to 50 years. Likewise, the City must obtain a similar license from SMART to build the pathway within the Railroad Station Reach.

7.2 List of Reviewing Agencies

A number of agencies will need to review and approve the designs and improvements for the Foss Creek Pathway. These are listed in the following table.

The City will have to obtain access easements to build the pathway on adjoining private property, including the Seghesio Winery and Simi Winery properties. The City may have an opportunity to require the construction of a portion of the Healdsburg North Reach of the pathway as a condition of approval for future development of the RJW property, if this pathway location is selected.

Reviewing Agencies					
Type	**Agency**	**Contact Information**	**Area(s) of Concern**	**Scope of Review / Approval**	**Notes**
Local	City of Healdsburg	Richard Spitler Planning Director 707.431.3348	Pathway Plan adoption and construction	Pathway Plan approval by City Council; Planning Commission design review approval of pathway improvements	
County	Sonoma County Water Agency	William Keene P.O. Box 11628 Santa Rosa, CA 95406 707.547.1922	Streambed alteration, water quality, wetlands impacts	If applicable, review and approve: 1601 Lake Streambed Alteration Agreement, Section 404 Wetlands Regulatory Program, Section 401 Water Quality Certifications in compliance with the Regional Water Quality Control Board's wetlands permit program	Review completed environmental work and relevant aquatic permits. Review periods of 30-45 days.
Railroad	Sonoma Marin Area Rail Transit	Lillian Hames, Director 90 Digital Drive Novato, CA 94949 415. 419.3510 phone lhames@attbi.com	Railroad easements, railroad operational impacts	Landscape easement, pathway setbacks, grade crossings	Informal review of designs. Partner on grade crossing permits and applications.
	North Coast Railroad Authority	Mitch Stogner, Director 419 Talmage Road, Suite M, Ukiah, CA 95482 707.463.3280 mitch.stogner@northcoastrailroad.org	Railroad easements, railroad operational impacts	Landscape easement, pathway setbacks, grade crossings	Informal review of designs. Partner on grade crossing permits and applications.
State	California Public Utilities Commission	David Stewart Rail Crossing Engineer 515 L Street, Suite 1119 Sacramento, CA 95814 916.324.7134 atm@cpuc.ca.gov	Railroad operational impacts	New or altered railroad grade crossing permits	Review formal applications for new crossings and/or alterations. Conduct diagnostic meetings and inspections as needed.
	Department of Fish & Game	Robert W. Floerke P.O. Box 47 Yountville, CA 94599 707.944.5517 rwfloerke@dfg.ca.gov	Streambed alteration, fisheries impacts, wildlife impacts	Review pathway environmental assessment. If applicable, review and approve 1601 Lake Streambed Alteration Agreement	Review periods of 30-45 days.

Type	Agency	Contact Information	Area(s) of Concern	Scope of Review	Notes
State	Regional Water Quality Control Board	North Coast Regional Water Quality Control Board 5550 Skylane Blvd., Suite A Santa Rosa, CA 95403 707.576.2220 phone	Streambed alteration, water quality impacts	If applicable, review and approve Waste Discharge Requirements Order	Review periods of 30-45 days.
	Caltrans	Caltrans District 4 PO Box 23660 Oakland, CA 94623	State highway impacts	Review pathway environmental assessment	Review periods of 30-45 days.
Federal	US Fish and Wildlife Service	Sacramento Fish and Wildlife 2800 Cottage Way, Room W-2605 Sacramento, CA 95825 916.414.6600	Streambed alteration, fisheries impacts, wildlife impacts	Review pathway environmental assessment. If applicable, review and approve 1601 Lake Streambed Alteration Agreement	Review periods of 30-45 days.
	US Army Corps of Engineers	Regulatory Branch U.S. Army Corps of Engineers 333 Market Street, 8th Floor San Francisco, CA 94105 415.977.8436	Streambed alteration, wetlands impacts, hydrology/ aquatic impacts	If applicable, review and approve 1601 Lake Streambed Alteration Agreement and Section 404 Wetlands Regulatory Program	Review periods of 30-45 days.

7.3 Development Permits

- City of Healdsburg

The locations where pathway development will occur on private property (including property owned by the City) are largely located within the P (Public) zoning district where a "park," such as the pathway, is a permitted use. Likewise, the sections of the pathway on the Seghesio Winery and Simi Winery properties, which are located in the ML Light Industrial zoning district, are also permitted as a "public use." Segments of the pathway located within 35 feet of Foss Creek are exempt from the riparian setback requirement because the pathway is considered a public street or thoroughfare. The pathway is subject to Design Review by the Planning Commission, which will consider the pathway's compliance with the City's design review requirements at the time it makes a recommendation to the City Council regarding the Foss Creek Pathway Plan.

- California Environmental Quality Act

The project is subject to environmental review in accordance with the California Environmental Quality Act (CEQA). The City, as lead agency, prepared a Mitigated Negative Declaration based on an Initial Study that determined pathway construction would result in potentially-significant environmental impacts in the areas of air quality, biological resources, cultural resources, hydrology and water quality, noise, and utilities and public services unless appropriate mitigation measures are taken.

The Mitigated Negative Declaration will be distributed for public review and comment prior to its adoption, along with a mitigation monitoring program.

- California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates public utilities, including railroads, in California. Modifications to an existing railroad crossing are subject to review and approval by the CPUC. It can administratively issue a permit (referred to an "88-B" permit) when the modifications are functionally related to the existing crossing and can be achieved within the existing or a contiguous right-of-way. Major modifications to an existing crossing or a new crossing require a full public hearing.

7.4 Funding Sources

There is a variety of grant programs available to fund the engineering and construction costs of the Foss Creek Pathway. Federal, state, and regional grant programs are competitive and involve the completion of extensive applications with clear documentation of the project need, costs and benefits. Successful applications require a combination of sound documentation, local support and lobbying on the regional and state level. A local match in the range of 10-20% is typically required. Local funding for bicycle and pedestrian projects typically comes from federal Transportation Development Act (TDA) funding, which is prorated to each county based on the return of gasoline taxes or general fund monies. A detailed list and descriptions of funding programs are found in Appendix B.

7.5 Phasing and Cost Estimates

The Foss Creek Pathway is divided into five reaches to allow for phased construction of the pathway over time as funding becomes available. Phased construction will allow the City to build the pathway reaches based on (1) community need and benefit, (2) construction feasibility and (3) funding availability. The reaches are ranked by these criteria in the following table.

Pathway Reach	Phase	Cost Estimate	Community Benefit	Construction Feasibility	Funding
Downtown	1	completed			
Railroad Station	2	$539,032	High	In design	In place
Foss Creek South	3	$1,330,630	High	Moderate constraints	Readily available
Foss Creek North	4	$778,164	Moderate	Multiple constraints	Available
North Healdsburg	5	$837,510	Moderate	Multiple constraints	Available

The key development issues, funding sources and cost estimates to construct the remaining reaches are discussed on the following pages. The Downtown Reach is not discussed because it was completed in 2005.

Railroad Station Reach

The Railroad Station Reach is identified for development in Phase 2 so that it can be developed at the same time as the Healdsburg Intermodal Transit Station. It was selected for this phase because of its ease of implementation and the increased connectivity it will provide between downtown and the Russian River.

Due to this reach's proximity to multiple destinations, including transportation, recreation, jobs, and housing, this portion of the pathway would likely compete well for funding programs geared either towards transportation, recreation or community enhancement such as:

- MTC TLC Capital Grants
- TEA-21/SAFETEA
- TDA Article 3
- SMART Funds
- Bicycle Transportation Account
- Transportation Enhancement Activities
- Air Quality Grants
- National Recreational Trails Program
- MTC Regional
- Bicycle/Pedestrian Program

Estimated Cost - Railroad Station Reach (Front Street to Healdsburg Avenue)		
Bike path improvements	2,150 LF	$229,700
Pathway amenities		71,833
Rest stops		23,750
Roadway improvements		462
Environmental Mitigation		22,017
Construction cost		347,763
Design and bidding	15%	52,164
Inspection, construction management & staking	15%	52,164
Project contingency	25%	86,941
Total estimated cost		**$539,032**

Foss Creek South Reach

The Foss Creek South Reach, from North Street to Dry Creek Road, is identified for development in Phase 3 because it would connect high-demand recreation destinations (i.e., Carson Warner Memorial Skate Park) to residential areas as well as existing and planned multi-family residential development on West Grant Street to commercial and community uses in downtown Healdsburg.

Due to its proximity to multiple destinations including civic, recreation, jobs and housing, in addition to creating a significant non-motorized vehicle route connecting Healdsburg with the downtown district, the Foss Creek South Reach would likely compete well for a variety of funding programs such as:

- MTC TLC Capital Grants
- Habitat Conservation Fund
- TDA Article 3
- National Recreational Trails Fund
- Air Quality Grants
- Land & Water Conservation Fund
- TEA-21/SAFETEA
- Bicycle Transportation Account
- MTC Regional
- Bicycle/Pedestrian Program

Estimated Cost - Foss Creek South Reach (North Street to Dry Creek)		
Bike path improvements	6,000 LF	$601,490
Pathway amenities		183,450
Rest stops		23,000
Roadway improvements		2,964
Environmental Mitigation		47,567
Construction cost		858,471
Design and bidding	15%	128,771
Inspection, construction management & staking	15%	128,771
Project contingency	25%	214,618
Total estimated cost		**$1,330,630**

Foss Creek North Reach

The Foss Creek North Reach would connect the residential areas at the north end of Grove Street to the commercial uses along Dry Creek Road. Since its greatest utility or benefit will be realized only if it is built when the pathway is completed to destinations to the south, this reach should be built in phase 4 after the Foss Creek South Reach is in place.

Since this reach will substantially complete the pathway and will provide access to a wide variety of destinations, the Foss Creek North Reach will likely compete well for a variety of funding sources. Potential funding sources for this reach include programs geared towards transportation, school commutes, recreation/conservation, or community enhancement such as:

- MTC TLC Capital Grants
- Habitat Conservation Fund
- TDA Article 3
- TEA-21/SAFETEA
- Bicycle Transportation Account
- National Recreational Trails Fund
- Air Quality Grants
- Land & Water Conservation Fund
- Safe Routes to Schools
- MTC Regional Bicycle/Pedestrian Program

Estimated Cost - Foss Creek North Reach (Dry Creek to Grove Street)		
Bike path improvements	3,185 LF	$198,285
Pathway amenities		107,333
Rest stops		11,250
Roadway improvements		150,300
Environmental Mitigation		34,873
Construction cost		502,041
Design and bidding	15%	75,306
Inspection, construction management & staking	15%	75,306
Project contingency	25%	125,510
Total estimated cost		**$778,164**

North Healdsburg Reach

The North Healdsburg Reach would finish the Foss Creek Pathway and connect the residential neighborhoods in northern Healdsburg to schools, parks and commercial districts to the south.

This reach will likely compete well for a variety of funding sources because it provides access to a range of destinations served throughout the entire corridor and the commitment displayed through the implementation of earlier phases. Potential funding sources to construct this reach will be geared towards transportation, school commutes, recreation/conservation, or community enhancement such as:

- MTC TLC Capital Grants
- Habitat Conservation Fund
- TDA Article 3
- National Recreational Trails Fund
- Air Quality Grants
- Land & Water Conservation Fund
- TEA-21/SAFETEA
- Bicycle Transportation Account
- Safe Routes to Schools
- MTC Regional Bicycle/Pedestrian Program

Estimated Cost - North Healdsburg Reach (Grove Street to Passalacqua Road)		
Bike path improvements	4,050 LF	$421,200
Pathway amenities		109,200
Rest stops		0
Roadway improvements		0
Environmental Mitigation		9,929
Construction cost		540,329
Design and bidding	15%	81,049
Inspection, construction management & staking	15%	81,049
Project contingency	25%	135,082
Total estimated cost		**$837,510**

Appendices

Appendix A

Foss Creek Multi-Use Path
Survey Results

Purpose of using trail

83% Recreation
17% Commute

Anticipated use of completed trail

9% Daily
51% Twice to four times a week
21% Once a week
13% Once a month
6% Other

Distance they live from trail

28% ¼ mile or less
47% ¼ to 1 mile
22% 1 to 2 miles
3% Over 2 miles

Reasons children do not walk/bicycle to or from school, parks or other destinations

22% Too much traffic in the neighborhood
3% Too far to bike
9% No sidewalks on route to school
24% Cars drive too fast through the neighborhood
10% Have too much to carry
3% Bike might get stolen
22% Crime- strangers, gangs, bullying
7% Other

Relative importance of trail amenities

1 Trash cans
2 Lighting
3 Access to destinations
4 Bathrooms
5 Landscaping
6 Directional signs
7 Parking
8 Bulletin boards
9 Interpretive signing

Number of days/month ride bike in good weather months

5% Never
12% Occasionally (1-2)
32% Frequently (5-10)
28% Most (>15)
23% Every day

Best description of respondent

27% Advanced, confident rider comfortable riding in most traffic situations
27% Intermediate rider not really comfortable riding in most traffic situations
9% Beginner rider who prefers to stick to the bike path or trail

Which of these best describes you?

38% Avid walker
43% Regular walker
10% Occasional walker

Survey Comments Received

Safety	Design	General	Positive	Negative
Need police monitoring / patrolling.	Landscaping with native plants only; Don't commercialize it; leave in most natural setting.	Who will keep it clean?	Great idea - a new place to walk; a wonderful plan; excellent ideas.	Use the money to repair streets
People need to feel safe while on the path	Wide enough for bicyclists, pedestrians, skaters to all safely share the pathway.	How will it affect businesses along its route?	This would give tourists more opportunity to relieve so much in-town congestion.	Too much money; waste of money.
Transients, bums, drug users, squatters, gangs	Path should not in any way interfere with future rail right-of-way!	How much will this cost to build and maintain?	Hurry the construction. Overdue! Not soon enough; Can't wait until it's done!	It better not raise property taxes.
Provide emergency phones	ADA accessible; good, smooth surface.	Hope we can walk without animals	Make it big as possible - they'll love it!	Destruction of natural habitat in the name of being trendy.
Vandalism.	Access from points along path; connections to all of Healdsburg facilities - Villa, Rec. Park, Badger Park, River, Plaza.	Where will path run in relation to the eroded area of the RR roadbed east of the old basin?	We need more of this kind of thing. I sometimes feel this City only concerns itself with the Plaza & shops around it, and tourists who come here. The citizens of Healdsburg are an afterthought.	I'm only concerned you may not do it. I have voiced a desire for this for 16 years.
Needs to be well-lit.	Should have tree cover to provide shade; low bushes.	Notify adjacent property owners early (now) because of backyard privacy.		Litter will be dumped and it will look horrible.
Unleashed dogs	Provide benches.	Please allow dogs on leash.		
	Rural in style.	Need doggie-doo bags.		
	Unpaved pathway parallel to paved pathway for joggers.	Make this a priority with funding.		
	Interpretive signing to be for native trees and plants.	Increase visibility of project. Tie into Barbieri Brothers Park / open space to north.		
	Parking should be available at both ends of path. Cars can be left in other lots in town. For daytime use only.	Make it attractive so that people use it often - regular users are your best caretakers.		
	A bike speed limit will need to be posted.	Just build the damn thing and how about a river path?		
	Safe crosswalks; cross traffic warning/controls; improve Mill Street/Healdsburg Avenue intersection because it is dangerous to walk through now.	We live on Chiquita Road and don't have sidewalks to the RR tracks.		
	Make it even longer.			

Appendix B

Funding Sources

Non-motorized transportation is gaining support across the nation. Accordingly, policy support and additional funding have recently been made available for bicycle transportation improvements. This has been true on the local and state level thanks to the 1994 California Bicycle Transportation Act. This has also been the case on the federal level through:

- the 1990 Clean Air Act,
- the 1991 Inter-Modal Surface Transportation Efficiency Act (ISTEA), and
- the 1998 Transportation Equity Act for the 21st Century (TEA-21).

These laws have called for increased spending on bicycle travel and allow communities more flexibility in spending highway funding on alternative modes, such as bicycling, walking, and transit. Already, these laws have led to over a billion dollars in bicycle, trail and pedestrian projects nationwide, and thousands of miles in new bicycle lanes, sidewalks, multi-use trails and other non-motorized enhancements. Several of the major potential competitive source grant funding programs that may be used to implement the Foss Creek Pathway are described below.

Federal Funding Sources

- TEA-21 and SAFETEA-LU

Federal funding through the TEA-21 (Transportation Equity Act for the 21st Century) program has provided much of the funding for bicycle and pedestrian projects. TEA-21 currently contains three major programs, STP (Surface Transportation Program), TEA (Transportation Enhancement Activities), and CMAQ (Congestion Mitigation and Air Quality Improvement) along with other programs such as the National Recreational Trails Program, Section 402 (Safety) funds, Scenic Byways funds, and Federal Lands Highway funds.

TEA-21 funding is administered through state and regional governments. Most, but not all, of the funding programs are transportation- versus recreational-oriented, with an emphasis on (a) reducing auto trips and (b) providing an intermodal connection. Funding criteria often includes completion and adoption of a bicycle and/or pedestrian master plan, quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, CEQA compliance and commitment of some local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent, but prefers to leverage other moneys at a lower rate.

All TEA-21 funds have been programmed. The successor legislation, which is currently known as SAFETEA-LU (Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users), will be a future source of funds. This legislation includes categories of funding and guidelines dedicated to non-motorized transportation.

- Congestion Mitigation and Air Quality Improvement Program

Congestion Mitigation and Air Quality Improvement funds are programmed by TEA-21 for projects that are likely to contribute to the attainment of a national ambient air quality standard, and congestion mitigation. These funds can be used for a broad variety of bicycle and pedestrian projects, particularly those that are developed primarily for transportation purposes. The funds can be used either for construction of bicycle transportation facilities and pedestrian walkways or for non-construction projects related to safe bicycle and pedestrian use (maps, brochures, etc.). The projects must be tied to a plan adopted by the State and MPO.

- National Highway System (NHS)

National Highway System funds are for improvements to the National Highway System, which consists of an interconnected system of principal arterial routes that serve major population

centers, international border crossings, airports, public transportation facilities, and other intermodal transportation facilities as well as other major travel destinations. These funds can be used to provide pedestrian and bicycle facilities constructed on NHS routes.

- Federal Lands Highway Funds

Federal Lands Highway funds may be used to build bicycle and pedestrian facilities in conjunction with roads and parkways at the discretion of the department charged with administration of the funds. The projects must be transportation-related and tied to a plan adopted by the State and MPO.

State Funding Sources

- Bicycle Transportation Account (BTA)

The state Bicycle Transportation Account is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. Funding that is available on a state-wide basis amounts to $7.2 million annually.

- Safe Routes to School

The Safe Routes to School program is a state program using federal transportation funds. This program is meant to improve school commute routes through construction of bicycle and pedestrian safety and traffic calming projects. A local match of 11.5% is required for this competitive program, which will allocate $18 million annually. Since it is a construction program, planning grants are not available through this program. Programs or activities related to education, enforcement, or encouragement may be eligible for reimbursement if they are related to the construction improvement.

- Office of Traffic Safety

The California Office of Traffic Safety has the mission to obtain and effectively administer traffic safety grant funds to reduce deaths, injuries and economic losses resulting from traffic related collisions in California. OTS distributes federal funding apportioned to California under the National Highway Safety Act and the Transportation Equity Act for the 21st Century (TEA-21). Grants are used to mitigate traffic safety program deficiencies, expand ongoing activity, or develop a new program. Grant funding cannot replace existing program expenditures, nor can traffic safety funds be used for program maintenance, research, rehabilitation, or construction.

OTS grants address several traffic safety priority areas including Pedestrian and Bicycle Safety. Eligible activities include programs to increase safety awareness and skills among pedestrians and bicyclists. Concepts may encompass activities such as safety programs, education, enforcement, traffic safety and bicycle rodeos, safety helmet distribution, and court diversion programs for safety helmet violators.

- National Recreational Trails Fund

The Recreational Trails Program provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized as well as motorized uses.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Development and rehabilitation of trailside and trailhead facilities and trail linkages

- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails (with restrictions for new trails on federal lands)
- Acquisition of easements or property for trails
- State administrative costs related to this program (limited to seven percent of a State's funds)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds)

- Environmental Enhancement and Mitigation Program

Environmental Enhancement and Mitigation Program Funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-and-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities, such as trails. State gasoline tax money funds the EEMP.

- State Coastal Conservancy

The SCC manages several programs that provide grant funds for coastal trails, access, and habitat restoration projects. The funding cycle for these programs is open. Funds are available to local units of government as well as non-profits.

The Conservancy has provided significant funds for study and implementation of coastal public access development and resource conservation in Sonoma County. The SCC may be a funding source for bicycle facilities that improve access to natural resources in Healdsburg.

- Regional Transportation Improvement Program (RTIP)

These funds are a portion of the State Transportation Improvement Program. Sonoma County Transportation Authority, acting as the Regional Transportation Planning Agency in the area, is responsible for allocating Sonoma County's share of the funding. Funds from this source can be attributed to bicycle transportation projects.

Regional Funding Sources

- TDA Article III (SB 821)

Transportation Development Act Article III funds are awarded annually to local jurisdictions for bicycle and pedestrian projects in California. These funds originate from the state gasoline tax and are distributed according to population by the Sonoma County Transit Authority on a yearly basis to local jurisdictions.

- Air Quality Management District

The Northern Sonoma County Air Pollution Control District has vehicular pollution prevention programs that could be applied to development of bicycle facilities or programs. Air District programs seek to improve air quality in partnership with local public, private and non-profit entities by supporting small-scale projects aimed at reducing emissions from motor vehicles.

Larger grants from the District are available annually through the AB 2766 program. The District receives a portion of the annual vehicle registration fees from the Department of Motor Vehicles through legislation authorized under Assembly Bill 2766 (Sher, 1990). The AB 2766 program provides incentive funding for projects that reduce on-road and off-road motor vehicle pollutant emissions (mainly nitrous oxides) and to a lesser extent particulate matter. Funding preference is given to projects that result in reduction of particulate matter from heavy duty diesel motor vehicles, rideshare and/or transit programs implemented by or under direct contract to local government entities, and the installation of physical devices or facilities that directly or indirectly reduce motor vehicle emissions.

- Transportation for Livable Communities (TLC)

MTC offers two kinds of assistance through the TLC program: capital improvement and planning. TLC grants are competitive funds meant to fund small-scale transportation improvements that are designed to make a big difference in a community's vitality. Eligible projects include streetscape improvements, transit, pedestrian, and bicycle oriented developments. Projects should be designed to "bring new vibrancy" to downtown areas, commercial cores and neighborhoods, enhancing their amenities and ambience and making them places where people want to live and visit.

Local Funding Sources

- Direct local jurisdiction funding

Local jurisdictions can fund bicycle and pedestrian projects using a variety of sources. A city's general funds are often earmarked for non-motorized transportation projects, especially sidewalk and ADA improvements.

Future road widening and construction projects are one means of providing bike lanes and sidewalks. To ensure that roadway construction projects provide these facilities where needed, appropriate, and feasible, it is important that an effective review process is in place so that new roads meet the standards and guidelines presented in this Plan.

- Impact fees

Another potential local source of funding is developer impact fees, typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- and off-site pedestrian and bikeway improvements, which will encourage residents to walk and bicycle rather than drive. In-lieu parking fees may be used to help construct new or improved bicycle parking. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

- Special taxing districts

Special taxing districts, such as redevelopment districts, can be good instruments to finance new infrastructure – including shared use trails and sidewalks - within specified areas. New facilities are funded by assessments placed on those that are directly benefited by the improvements rather than the general public. In a "tax increment financing" (TIF) district, taxes are collected on property value increases above the base year assessed property value. This money can then be utilized for capital improvements within the district. TIFs are especially beneficial in downtown redevelopment districts.

These districts are established by a petition from landowners to a local government. The districts can operate independently from the local government and some are established for single purposes, such as roadway construction.

Other Funding Sources

Local sales taxes, fees, and permits may be implemented, requiring a local election. Parking meter revenues may be used according to local ordinance. Volunteer programs may substantially reduce the cost of implementing some of the proposed pathways. Use of groups such as the California Conservation Corps (who offer low-cost assistance) will be effective at reducing project costs. Local schools or community groups may use the bikeway or pedestrian project as a project for the year, possibly working with a local designer or engineer. Work parties may be formed to help clear the right of way where needed. A local construction company may donate or discount services. A challenge grant program with local businesses may be a good source of local funding, where corporations "adopt" a bikeway and help construct and maintain the facility.

Other opportunities for implementation will appear over time, which may be used to implement the pathway. The following table summarizes a number of funding sources available for both bicycle and pedestrian projects.

Summary of Funding Programs							
Funding Program	**Modes**	**Trip Types**	**Project Types**	**Required Matching Funds**	**Deadlines**	**Funding Limits**	**Contact & Website Information**
Federal Funding							
Transportation Enhancement Activities	Bicycle & pedestrian	Transportation	Construction	11.5%	Varies by MPO/RTPA		Caltrans
Regional Surface Transportation Program	Bicycle & pedestrian	Transportation	Construction & non-construction	20%	Varies by MPO/RTPA		Caltrans
Congestion Mitigation & Air Quality Improvement Program	Bicycle & pedestrian	Transportation	Construction & non-construction	11.5%	Varies by MPO/RTPA		Caltrans
National Highway System	Bicycle & pedestrian	Transportation	Construction & non-construction	20%	Varies by MPO/RTPA		U.S. Dept. of Transportation - FHA
Federal Lands Highway Funds	Bicycle & pedestrian	Transportation	Construction	None	July		U.S. Dept. of Transportation - FHA
Local Highway Bridge Program	Bicycle	Transportation	Construction	20%	On-going		Caltrans
Railroad/Highway At-Grade Crossing Program	Bicycle & pedestrian	Transportation & recreation	Construction	up to 10%	March 1 annually		Caltrans
National Recreation Trails Fund	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	20%	October		Ca. Dept. Parks & Recreation.
Highway Safety Program	Bicycle & pedestrian	Transportation	Non-construction	11.5	On going		Ca. Office of Traffic Safety
Transportation, Community and System Preservation Program	Bicycle & pedestrian	Transportation	Construction & non-construction	N/A			U.S. Dept. of Transportation - FHA

Summary of Funding Programs							
Funding Program	**Modes**	**Trip Types**	**Project Types**	**Required Matching Funds**	**Deadlines**	**Funding Limits**	**Contact & Website Information**
State Funding							
State Transportation Improvement Program	Bicycle & pedestrian	Transportation	Construction	none	Dec. 15, odd-number-ed years	Varies	Caltrans
Bicycle Transporta-tion Account	Bicycle & pedestrian	Transportation	Construction	10%	Dec. 1 annually		Caltrans
Safe Routes to Schools	Bicycle & pedestrian	Transportation	Construction	10%	Cycle varies	$500,000	Caltrans
Environmental Enhancement and Mitigation program	Bicycle & pedestrian	Transportation	Construction	20%	November	$250,000	Caltrans
Petroleum Violation Escrow Account	Bicycle & pedestrian	Transportation	Construction	None	June 30, annually	Varies	Caltrans
Habitat Conservation Fund Grant Program	Bicycle & pedestrian	Transportation & recreation	Construction	50%	October	$500,000	Ca. Dept. Parks & Recreation
Land and Water Conservation Fund	Bicycle & pedestrian	Transportation & recreation	Construction (including land acquisition)	50%	May	$200,000	Ca. Dept. Parks & Recreation
Mello-Roos Community Facilities Districts	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction		N/A		
California Conservation Corps	Bicycle & pedestrian	Transportation & recreation	Construction	None	On-going		California Conservation Corps
Community-Based Transportation Planning Grants	Bicycle & pedestrian	Transportation & recreation	Non-construction	20%	October	$300,000	Caltrans
Highway-Railroad Grade Separation Program	Bicycle & pedestrian	Transportation & recreation	Construction	20%	April 1 annually	Each project not to exceed $5 million	Caltrans

Summary of Funding Programs							
Funding Program	**Modes**	**Trip Types**	**Project Types**	**Required Matching Funds**	**Deadlines**	**Funding Limits**	**Contact & Website Information**
Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	N/A	October		Ca. Dept. Parks & Recreation
Office of Traffic Safety Grants	Bicycle & pedestrian	Transportation	Construction & non-construction	N/A	October	N/A	Ca. Office of Traffic Safety
Grant Anticipation Revenue Vehicle Bonds	Bicycle & pedestrian	Transportation	Construction & non-construction	11.5%	On going		Caltrans
State Highway Account Loan Program (Short Term Loans)	Bicycle & pedestrian	Transportation	Construction & non-construction	11.5%	On going		Caltrans
Transportation Finance Bank	Bicycle & pedestrian	Transportation	Construction & non-construction	11.5%	On going		Caltrans
Regional Funding							
Local Air District Projects Funded by Vehicle Registration Fees	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	Varies by jurisdic-tion	Varies by jurisdiction	Varies by jurisdiction	Local air district
Transportation Development Act Article 3	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	None	Varies by jurisdiction	2% of Local Transporta-tion Fund	Local MPO/RTPA
Local Sales Tax for Transportation	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	None	Varies by jurisdiction	Varies by jurisdiction	Local MPO/RTPA
Local Funding							
Developer Impact Fees	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	N/A	N/A	N/A	Local Jurisdiction

Summary of Funding Programs							
Funding Program	**Modes**	**Trip Types**	**Project Types**	**Required Matching Funds**	**Deadlines**	**Funding Limits**	**Contact & Website Information**
Private Funding							
Bikes Belong Coalition	Bicycle	Transportation & recreation	Construction & non-construction	N/A	On going	$10,000	Bikes Belong Coalition
American Greenways Kodak Awards	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	N/A	Early June	$2,500	The Conservation Fund
Recreational Equipment, Inc. (REI)	Bicycle & pedestrian	Transportation & recreation	Construction & non-construction	N/A	On-going	$2,500	Recreational Equipment, Inc.


04/13/2006


05/12/2006